

# POTTSCO

## Light-Weight Aggregate

*Light-Weight*

*Low Cost*

*High Insulation Values*

*High Acoustical Values*

*Load-Bearing*

*Fire Resistant*

*Nailable*

*Plaster and Stucco Base*

*Easy Workability*

## USE IT FOR

Structural Concrete

Fireproofing

Load-Bearing Building Units

Bridge Decks

Nailing Concrete

Precast Structural Slabs

Precast Roof Slabs

Partition Units

Floor-fill

Roof-fill

*and wherever else dead load saving is advantageous*

*Exclusively Produced by*

# THE POTTSCO CORPORATION

*Quality and Economy*





H. H. POTTS  
PRESIDENT

PHONE STATE 1340



Load Bearing

Low Cost

High Insulation  
Value

High Acoustical  
Value

*Used in some of the largest and most modern Government Buildings*

# The PottSCO Corporation

One North La Salle Street  
Chicago

Light Weight

Fire Resistant

Uniform and  
Easily Worked

Direct Plaster  
& Stucco Base

## THE BUILDING AND CONSTRUCTION INDUSTRY:

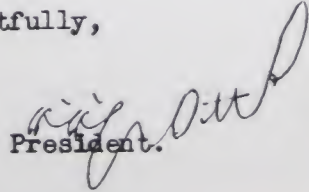
This catalog has been compiled and issued in the hope that the wide variety of data herein contained will serve to acquaint the reader with the salient qualities and advantages of POTTSCO light-weight concrete.

No attempt has been made to provide accurate specifications for specific work. Rather, this catalog serves as a general treatment of the product and its uses. However, this company will, through its general and district offices, provide detailed specifications for any project.

We believe POTTSCO presents a product of QUALITY and ECONOMY to the building and construction industry -- a combination that will be happily received by purchasers and users of light-weight concrete.

An earnest effort will be made by all representatives of this corporation to serve the industry to the best of their ability.

Respectfully,

  
President.

The following offices are established under direct and competent supervision to quote prices, handle orders and generally service the sale and use of POTTSCO.

Write the nearest office.

General Office

Chicago, Illinois - One North LaSalle Street  
Telephone - State 1340. President, H. H. Potts.

New York City

1440 Broadway - Telephone - Lackawanna 4-2714.  
A. R. McMullin, New York Manager.

Washington, D.C.

510 Metropolitan Bank Building - Telephone - National 9334  
L. K. McDorman, District Manager.

Newark, N. J.

60 Park Place - Telephone - Market 2-4917  
J. Franklin, District Manager

Plants are located at - Chicago, Illinois -  
Pittsburgh, Pennsylvania - Bethlehem, Pennsylvania.



Are You Interested in Saving Money on  
Your Light-weight Concrete

SOME REASONS FOR USING POTTSCO

1. It is economical - the aggregate is low in cost offering contractor substantial savings.
2. Use it for:
  - Floor-fill
  - Roof Slabs
  - Nailing Concrete
  - Fireproofing
  - Back-up Tile
  - Partition Tile
3. It places perfectly and rapidly - still further reducing cost to contractor for concrete in place.
4. POTTSCO floor-fill and similar concrete weighs from 70 to 75 pounds per cubic foot. Wall load-bearing POTTSCO concrete weighs approximately 100 pounds per cubic foot.
5. It meets Federal, State and City building codes and requirements.
6. POTTSCO aggregate is entirely free from any elements which react unfavorably to steel, iron or metal - no possible corrosion.
7. POTTSCO concrete is fire-proof.
8. POTTSCO concrete has superior insulation and acoustical properties.
9. High strength with minimum amount of cement is developed.
10. POTTSCO aggregate can be handled equally well through Ready-Mix or Transit-Mix plants.
11. Only one grade of aggregate to handle - no segregation - ready to use as unloaded from car.
12. POTTSCO concrete has been used in large government and commercial projects.
13. Producing plants, in conjunction with low freight rates, have been established so that POTTSCO may be used on any job in a very wide territorial area with BIG savings.
14. Summed up POTTSCO aggregate produces a perfect cellular, porous, light-weight concrete at an attractive cost.

THE POTTSCO CORPORATION  
One North LaSalle Street,  
Chicago

MATERIAL



TREASURY DEPARTMENT  
WASHINGTON

OFFICE OF SUPERVISING ARCHITECT

IN REPLYING QUOTE THE ABOVE SUB-  
JECT, BUILDING, AND THESE LETTERS SA-AE

July 1, 1933.

The Pottisco Corporation,  
1 North LaSalle Street,  
Chicago, Ill.

Gentlemen:

Referring to your letter of June 12th, the specifications in use by this office for light weight concrete fill in connection with the construction of buildings under the supervision of this office have been modified to permit the use of material of the type manufactured by your company.

Respectfully,

Jas. A. Wetmore

*RNG*  
Acting Supervising Architect.



## THE POTTSCO CORPORATION

Exclusive Producer of "PottSCO" Lightweight Concrete Aggregate

One North LaSalle Street, CHICAGO, ILL.

PLANTS IN CHICAGO AND PITTSBURGH

**"POTTSCO"—AN INERT, CELLULAR, POROUS, LIGHTWEIGHT AGGREGATE  
WEIGHING APPROXIMATELY 48 LBS. PER CUBIC FOOT**

### Uses

Structural Concrete.	Partition Units.
Fireproofing Steel Columns and Beams.	Nailing Concrete.
Floor Fill.	Back-up Units — Load Bearing.
Roof and Floor Slabs.	Special Products.

**POTTSCO**  
Light-Weight Aggregate

*A Good Product That Combines the Most in Quality with the Most in Economy*

### Advantages

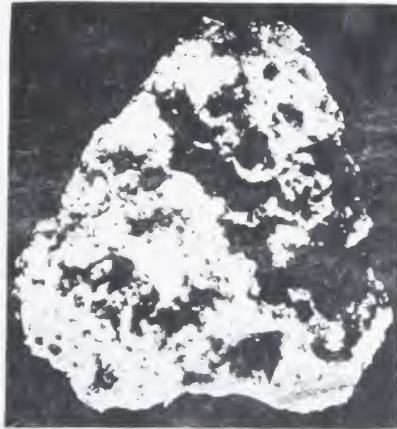
Light Weight.	Good Plaster and Stucco Base.
Economical ( <i>first cost and in place</i> ).	Smooth Finish and Texture.
Low Absorption.	Excellent Bond.
High in Insulation Value.	Low Capillary Attraction.
High in Fire Resistance.	
High Acoustical Properties.	
Excellent for Nailing.	

### Structural Concrete

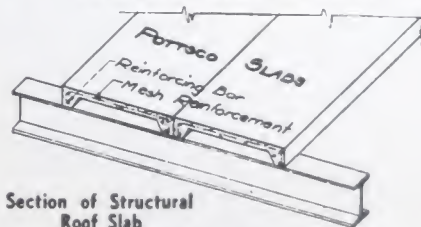
Where saving in weight is desirable for reinforced structural concrete, POTTSCO may be used to decided advantage. Specifications furnished on request.

### Fireproofing Steel

A saving in weight of from 40 to 60 lbs. per cu. ft. can be made with POTTSCO as compared with ordinary stone concrete. This feature offers the opportunity to effect great savings in cost of steel. Specifications furnished on request.



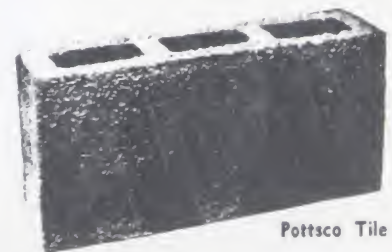
A Magnified Granule of PottSCO



Section of Structural Roof Slab



Left:  
Section of a Steel Column  
Fireproofed by  
PottSCO  
Concrete



PottSCO Tile

### Floor Fill

POTTSCO floor fill averages 70 to 75 lbs. per cu. ft. with strength in excess of 500 lbs. per sq. in. This strength can be produced with a mix as lean as 1:9.



U. S. Post Office, Chicago, Ill.

GRAHAM, ANDERSON, PROBST & WHITE, Architects  
JOHN GRIFFITHS & SON CO., Builders

POTTSCO was used throughout this building as floor fill

*Samples—Technical and Engineering Data—Quotations—Promptly Furnished*



# POTTSCO *Light weight Building* BACK-UP UNITS

Combine those rare merits of Economy and Quality

THIS IS THE FIRST OF A SERIES OF FACT STATEMENTS THAT WILL BE PUBLISHED, IN AN EFFORT TO FAMILIARIZE ARCHITECTS, BUILDERS, CONTRACTORS AND OWNERS WITH AN OPPORTUNITY TO IMPROVE THE QUALITY OF CONSTRUCTION AND SIMULTANEOUSLY SAVE MONEY.



POTTSCO Back-up Units are good for the following reasons :

*Low Cost  
Lightweight  
Low Absorption  
Low Capillary Attraction*

*High Insulation  
Fire Resistance  
Sound-deadening  
Nailing, Sawing and Boring*

*Direct Plaster and Stucco Base  
Light, Clear Color  
Smooth Texture and Edges*

==== Exclusively Manufactured and Sold by =====



All of the following statements are made after extensive research and proof -- Technical reports are on file and will be gladly furnished on request.

**LOW COST:** By favorable arrangements with the manufacturers of the lightweight aggregate from which **POTTSCO** Units are made, and through our own economical manufacturing facilities, we are able to supply **POTTSCO** lightweight Back-up Units at a cost, which will provide very substantial savings in the total cost of construction as compared with other materials or units adapted to similar construction, and in addition give you a product that possesses many other qualities, so essential to good construction. **POTTSCO** Units are made in many shapes and designs, so that we can meet your every requirement. Let us tell you more about **POTTSCO** lightweight Units and give you a bid.

**LIGHTWEIGHT:** **POTTSCO** Units are from 35 to 40% lighter in weight than ordinary concrete units. The savings in handling and laying on the job are very substantial—yet they possess a liberal margin of safety in the requirements of the general and local building codes, as to strength and compressive resistance. Although very light, they are very strong—and get stronger with age. **POTTSCO** Units are for load-bearing walls and make ideal partition walls as well.

**LOW ABSORPTION:** The absorption of **POTTSCO** Units is much lower than exists in competitive products. It is so low that in some cases these units have been approved by State Industrial Building Commissions for outside walls. We recommend them, however, primarily for back-up work.

**LOW CAPILLARY ATTRACTION:** Capillary attraction (the action which takes place when the molecules of a liquid are attracted by a solid, causing the fluid to rise above its level about the sides of a containing vessel), although the absorption as above stated is low, occurs only in slight form. This creates a condition that is highly advantageous from the standpoint of elimination of moisture and dampness and improved insulation.

**HIGH INSULATION:** The extremely light, porous character of the structure of **POTTSCO** Units, although sufficiently dense for low absorption and capillary attraction, gives

a unit of especially high insulation qualities. These units are almost perfectly immune from the conductivity of heat and cold. The structure is such that under normal conditions the transmission of heat and cold is negligible. Obviously, in buildings where insulation must be provided for, **POTTSCO** Units are especially adaptable, and their consideration well deserved.

**FIRE RESISTANCE:** The ingredient aggregate, from which **POTTSCO** Units are made, has initially been fused at high temperature, so that the fire resistance of **POTTSCO** Units is especially high. **POTTSCO** Units have withstood successfully every fire test to which they have been submitted. Of all their qualities, none are superior to their fire resistance.

**SOUND-DEADENING:** The same qualities that provide for resistance of heat and cold operate to produce a unit that is effectively sound-proof — another worthy quality for Back-up Units.

**NAILING, SAWING AND BORING:** These qualities, where they are required, are extremely conducive to economy in construction and are generally recognized as such. Ready proof of the superior qualities of **POTTSCO** Units is always available.



**POTTSCO** Back-up Units used in Permanesque Homes,  
Pasadena Boulevard, Milwaukee, Wis.  
Furnished by The Economy Concrete Products Co.  
Wauwatosa, Wis.



**POTTSCO** Units are easily nailed and the nails **HOLD**—a real advantage.

**DIRECT PLASTER AND STUCCO BASE:** The smoothness and adhesion of **POTTSCO** Units make a perfect base for plaster and stucco. The smooth surface texture of the units contributes to saving plaster or stucco materials and accelerates the labor of application. The bonding or biting **POTTSCO** surface insures permanency. There can be no chemical reaction between the base, **POTTSCO** Units, and the plaster or stucco. Furring and lathing may be altogether avoided and that expense saved, if desired. Decorative, colored wall finishes may be applied with remarkable results direct to **POTTSCO** walls.

**LIGHT, CLEAR COLOR:** The general white or gray color of **POTTSCO** Units offers a pleasing wall, and can be left uncovered with an effect that is artistic.

**SMOOTH TEXTURE AND EDGES:** The perfectness of shape, edges, and surface contributes to even joints and ease of handling and laying. Masons like to handle and lay **POTTSCO** Units. There is no patching of joints and corners. The entire wall surface is true.

**WE HAVE** secured the exclusive manufacturing rights on **POTTSCO** Units in this territory.

**WE ARE** prepared to furnish lightweight Back-up Units of almost any size, of the highest quality, at prices that will save you a great deal in your construction.

**WE ASK** for the opportunity to talk with you and show you conclusively the advantages, the economy, and the high qualities of **POTTSCO** UNITS.



Kalamazoo, Michigan — De Haan Apartments  
Another **POTTSCO** Back-up Job



A Specimen **POTTSCO** Tile 4" x 8" x 16"  
A good Back-up Tile and Partition Unit

## **POTTSCO** UNITS Should Be Used For

*Apartments*  
*Armories, Auditoriums, Rinks, Stadiums*  
*Banks*  
*Office Buildings*  
*Public Buildings and Institutions*  
*Schools*  
*Churches*  
*Clubs and Lodge Buildings*  
*Garages*  
*Hotels and Restaurants*  
*Hospitals*  
*Warehouses*  
*Commercial and Industrial Buildings*  
*Residences*  
*Stores and Markets*  
*Theatres*

And wherever else there is  
need for a **SUPERIOR**  
**BACK-UP UNIT!**



# Want To Save Money?

Well—Here Is  
One Way To Do It—



**POTTSCO** cuts your cost for all light-weight  
concrete construction

because of

LOW COST per cubic yard

LOW COST of handling

LOW COST of mixing

LOW COST of placing

♦ ♦ ♦ ♦ ♦



A Magnified Granule of POTTSCO

LOWEST finished cost--HIGHEST finished quality

♦ ♦ ♦ ♦ ♦

This circular is being mailed to outstanding  
contractors to inform them of the paramount  
features of POTTSCO — the one light-weight  
aggregate that will enable them to cut costs

**Other contractors are realizing  
this saving — — — so can you.**

*If you are bidding on  
government work, you  
will be particularly  
interested in the  
enclosure —  
turn the  
page*



# POTTSCO Light-Weight Concrete Aggregate

has been used successfully for the past five years  
in all types of building construction » » »



NEW U. S. POST OFFICE  
Canal, Van Buren and Harrison Streets  
CHICAGO

Largest Post Office Building  
in the World

Graham, Anderson, Probst & White  
Architects

John Griffith & Son Company  
Builders

THE NEW CHICAGO POST OFFICE used POTTSCO for  
all light-weight floor-fill concrete and it gave a first-class job.

## POTTSCO is Economical:

Only one grade of aggregate to handle -- use  
it just as it is unloaded from cars --

## POTTSCO Makes Good Concrete:

Hard -- cellular -- porous -- light - weight  
(75 pounds per cubic foot up)

## POTTSCO Cuts Labor Costs:

Perfect workability -- perfect bonding -- no  
harshness in placing

## POTTSCO is Approved By:

U. S. Government, City and State Building Codes

« « « THE POTTSCO CORPORATION NOR



# Combines These GOOD QUALITIES

Economy

Light weight

Superior Insulation

High compressive strength

Fire-resistant

Chemically inert (no corrosion)

Places and handles cheaply and well

Absorbs sound

Excellent bond

THE NEW U. S. POST OFFICE AT  
CINCINNATI, OHIO,  
was completed with POTTSCO  
as floor-fill throughout

Consolidated Engineering Co., Builders  
J. E. Smith Co., Concrete Contractor

And here is what the contractor  
says about the job --



J. E. SMITH COMPANY  
BUILDERS  
1206 SHERMAN AVENUE  
CINCINNATI  
TELEPHONE WEST 0613

June 1,  
1933.

H. H. Jette Corporation  
1 North La Salle St.  
Chicago, Ill.

Dear Mr. Jette:

When we formally closed the contract with you for furnishing "Pottscos" for the New Cincinnati Post Office, you stated that in allowing 1800 lbs. of Pottscos to the cubic yard, that this 1800 lbs. would yield from ten to fifteen percent more than an actual cubic yard of material.

At the time, we were rather skeptical of your statement, and since we have completed our job, using approximately 2200 yds. of your material, we find that the yield is actually 15% greater.

We had a little difficulty at the start by using too much water and suggest that you caution your future purchasers of Pottscos to be careful about this water content. We like your material very well, handles very nicely and we have floors that have passed a very rigid Government inspection.

Very truly yours,

J. E. SMITH COMPANY  
*J. Edward Smith*

JES:PC

## Ask Us for Test Data on POTTSCO Proving These Points

Insulation Value . . . . . .30 BTU

Compressive Strength . . . From 400 lbs. to 2000 lbs.  
Per Square Inch  
(depending on the mix)

Acoustical Value . . . . 45.7 Units Ave. Reduction

Light Weight . . . . . From 75 lbs. Per Cubic Foot Up

NORTH LA SALLE STREET, CHICAGO » » »



A GOOD PRODUCT -- AN ECONOMICAL PRODUCT  
FOR MAJOR CONCRETE CONSTRUCTION

\*\*\*\*\*

POTTSCO, a standard, recognized and approved product, is sold exclusively by THE POTTSCO CORPORATION which makes a **genuine** effort to give **genuine** service » » »



## **POTTSCO'S BIG ADVANTAGES TO YOU:**

Makes A Better Job—

Assures A Winning Bid—

And Saves You Money.

\*\*\*\*\*

Samples — Technical and Engineering Data — Quotations  
Promptly Furnished

Ask us for Delivered Price  
on any job you have or any  
job you are bidding on » » »

\*\*\*\*\*

## **The PottSCO Corporation**

One North La Salle Street, Chicago

Telephone: State 1340



## INSULATION

Tests and use have definitely proved that POTTSCO concrete is the highest in quality from the standpoint of insulation of any structural concrete thus far developed.

POTTSCO, therefore, deserves consideration in any type of building construction where insulation against heat and cold is needed or important.

C. F. GEBHARDT

MECHANICAL ENGINEER

CHICAGO

March 26, 1929

H. H. Potts Company  
228 North LaSalle Street  
Chicago, Illinois.

Gentlemen:

We submit herewith the results of tests which we have conducted to determine the rate of heat flow through your "Pottscoc" building tile.

### Physical Measurements

Length, inches 15-7/8"  
Height, inches 7-5/8"  
Thickness, inches 8  
Density, pounds per cu. ft. of volume 65  
Hollow Space, percent of total volume 42.2  
Density of Aggregate, pounds per cu. ft. 112.

### Heat Conductivity Test

In conducting this test we have used the flat plate method which gives the internal conductivity of the material, surface to surface. In the data below we have expressed this conductivity in B.T.U.s per hour per square foot of wall surface per degree Fahr. of temperature difference between the surfaces of the wall for the 8 inch thickness.

The temperatures on the two sides of the tile were measured with copper - advance thermocouples attached directly to the surface of the tile. You will note that the warm side was maintained at a temperature of 100 degrees Fahr. and the cold side at 45 degrees Fahr. This gives a temperature difference across the tile of 55 degrees Fahr. and a mean or base temperature of 72.5 degrees Fahr. The results are as follows:

Temperatures - Deg. Fahr.			Heat Conductivity	
Warm Side	Cold Side	Difference	Mean	B.T.U.s per HOUR
100	45	55	72.5	0.30

Testing Engineer  
J. C. Peebles.

Respectfully submitted,

Per *J. C. Peebles*

C. F. GEBHARDT

MECHANICAL ENGINEER

CHICAGO

December 26, 1928

H. H. Potts Company  
Builders Building  
Chicago, Illinois.

Gentlemen:

We have your letter of December 13th relative to our report of March 26, 1928, covering heat conductivity tests of "Pottscoc" building unit. We note the question which you raise relative to this material as compared with Haydite. In reply we are pleased to advise as follows:

The "Pottscoc" unit which we tested contains approximately 42 percent of hollow space, while all the tests which we have conducted on Haydite have made use of a solid section. You will note therefore, that a direct comparison between the two materials is rather difficult because the hollow space may or may not be an advantage, depending upon its size and shape and upon the manner in which the units are assembled in the wall.

The test on Haydite, a copy of which you enclosed in your letter, was made by us nearly three years ago and was the first which we conducted on this material. Recent tests on commercial Haydite show heat conductivities averaging from 3 to 3.5 B.T.U.s per hour per inch of thickness. Inasmuch as heat conductivity of a homogeneous material is inversely proportional to the thickness it follows that the conductivity through 8 inches of such Haydite would average from 0.375 to 0.437 B.T.U.s per hour. This is to be compared with a conductivity of 0.30 B.T.U.s per hour for the 8 inch "Pottscoc" unit. Now it is entirely possible that this difference, apparently in favor of the Haydite unit, may be due to the hollow spaces which the latter contains. An exact answer to this question cannot be given on the basis of the data in hand. Tests on exactly similar units of the two materials would be required before a conclusive comparison could be made.

We have made no tests on Haydite building units of a design similar to the "Pottscoc" units nor have we any such tests by other experimenters come to our attention. In our opinion tests on solid slabs of Haydite have but little meaning when applied to a building unit such as "Pottscoc". On the basis of tests made for made, the "Pottscoc" unit is superior to an equal thickness of solid Haydite.

Very truly yours,  
C. F. Gebhardt

Per *J. C. Peebles*

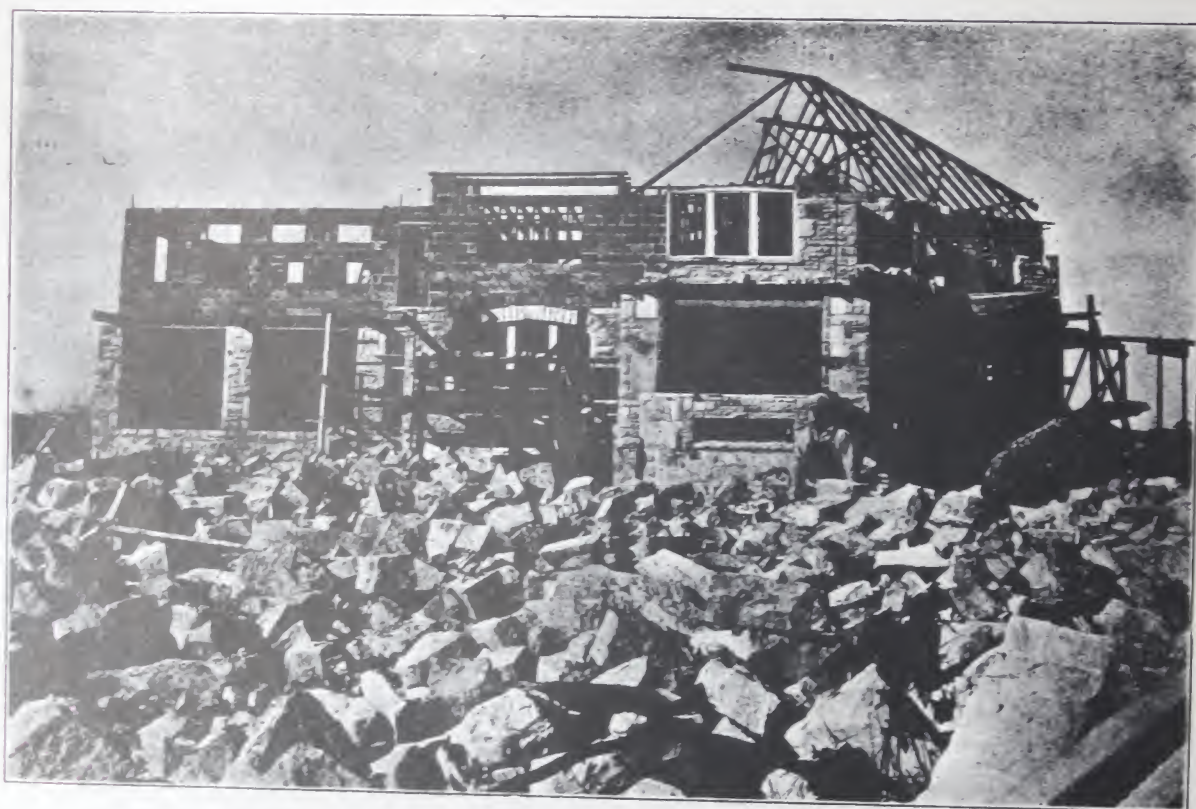
When you  
use

**POTTSCO**

You get  
real

**INSULATION**

This is the second of a series of educational papers on POTTSCO light-weight concrete building back-up units, intended to acquaint Architects, Builders, Contractors and Owners with an all-quality product.



A representative MILWAUKEE, WISCONSIN, home—a type where quality is demanded.  
POTTSCO back-up units are used throughout.

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The following three pages tell why discriminating Architects  
and Builders use POTTSCO LIGHT-WEIGHT BACK-UP UNITS

---

Exclusively Manufactured and Sold by

---



# G. F. GEBHARDT

MECHANICAL ENGINEER

CONSULTING ENGINEER AND  
SUPERVISOR OF INVESTIGATION  
CHICAGO

March 28th, 1929.

H. M. Potts Company  
220 North LaSalle Street  
Chicago, Illinois

Gentlemen:

We submit herewith the results of tests which we have conducted to determine the rate of heat flow through your "Pottscos" building tile.

## Physical Measurements

Length, inches 15-7/8"  
Height, inches 7-5/8"  
Thickness, inches 8  
Density, pounds per cu.ft. of volume 65  
Hollow Space; percent of total volume 42.2  
Density of Aggregate; pounds per cu.ft. 112.

## Heat Conductivity Test

In conducting this test we have used the flat plate method which gives the internal conductivity of the material, surface to surface. In the data below we have expressed this conductivity in B.t.u.s per hour per square foot of wall surface per degree Fahr. of temperature difference between the surfaces of the wall for the 8 inch thickness.

The temperatures on the two sides of the tile were measured with copper - advance thermocouples attached directly to the surface of the tile. You will note that the warm side was maintained at a temperature of 100 degrees Fahr. and the cold side at 45 degrees Fahr. This gives a temperature difference across the tile of 55 degrees Fahr. and a mean or base temperature of 72.5 degrees Fahr. The results are as follows:

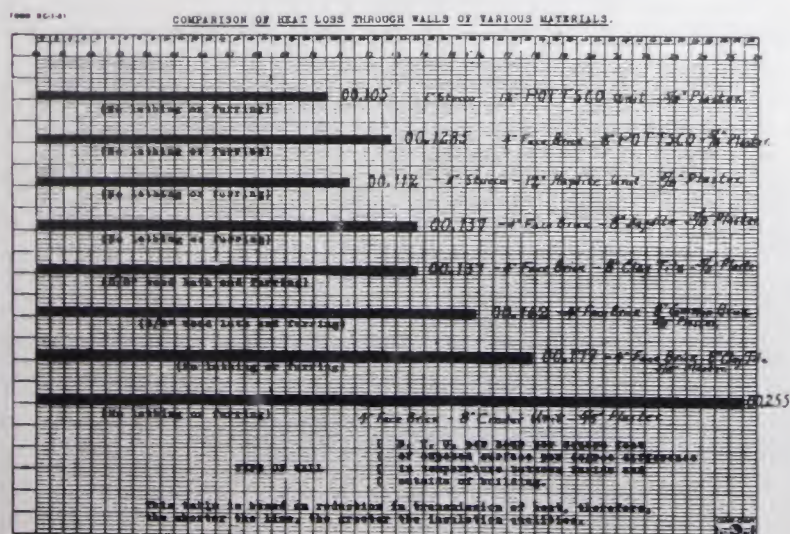
Temperatures - Deg. Fahr.			Heat Conductivity	
Warm Side	Cold Side	Difference	Mean	B.t.u.s. per Hour
100	45	55	72.5	0.30

Testing Engineer  
J. C. Peabody.

Respectfully submitted,  
Per *J. C. Peabody*

The POTTSCO aggregate from which POTTSCO units are made is so high in INSULATION that it can be shipped in coal or gondola cars during the severest part of the winter, wet and full of moisture and only a thin crust around the sides, bottom and top of car will form. THE COLD WILL NOT PENETRATE A CAR LOAD TO EVEN THE POINT OF FREEZING.

Is it any wonder then that POTTSCO units are high in INSULATION?



G. F. Gebhardt, Mechanical Engineer, ARMOUR INSTITUTE OF TECHNOLOGY, submits this report after regulation insulation test on standard 8 x 8 x 16" POTTSCO light-weight blocks.

This laboratory, recognized for its extensive and thorough research work in the field of INSULATION, was purposely selected to make these tests on POTTSCO units, because it is to this laboratory chiefly that insulation products are submitted.

Graphically expressed, the relation of INSULATION efficiency of POTTSCO units as shown by above report to other structural units, based on general published reports, reveals an interesting comparison.

POTTSCO walls are INSULATED walls.



## *A Magnified Granule of POTTSCO*



The fine, porous, granular, cellular structure of POTTSCO aggregate when combined with cement, forms a hard mass of sponges, filled with minute air spaces and sealed over with cement, which kills the transmission of heat and cold.

The physical characteristics of this combination of cement and POTTSCO sets up an impervious barrier to the atmospheric elements and accomplishes the ideals of INSULATION.

### **HERE IS JUST A PLAIN, PRACTICAL PROOF**

You can lay up a plain wall of POTTSCO units and apply intense heat to one side. Heat it to from 1500 to 2000 degrees F. Bring it to a red hot heat. Keep the heat applied for a long time. (These tests have been run from 4 to 100 hours.) Then place your hand on the opposite side of the wall and keep it there as long as you like. You will feel no more than a little warmth.

With what other structural building unit can this test be made?

If you can have one side of the wall, say 1500 degrees and the opposite side say 150 degrees—a reduction of 1350 degrees in say an 8-inch wall, what chance has the cold at say 20 degrees below zero to penetrate the wall? NO INSULATION MATERIAL IS BETTER THAN ITS ABILITY TO RESIST THE TRANSMISSION OF HEAT AND COLD.

### *UNDERWOOD HOTEL, WAUWATOSA, WIS.*



*Another representative job where POTTSCO back-up units were used throughout.*

*—Architect A. L. Seidenschwartz, Milwaukee, Wis.*



Form 23932-1-Rev. B-3845  
Rev. 26476

Chicago, Illinois  
August 31, 1928.

H. H. Potts Company,  
Builders Building,  
Chicago, Illinois.

Gentlemen:-

The following is result of heat test, authorized by your letter of August 25th, on two 8x8x16" building blocks, which were delivered to our laboratory by your representative.

The test performed was in the nature of a preliminary observation and no absolute temperature determinations were made.

Blocks under test were surrounded to a certain extent by other blocks in order to confine the heat as much as possible and were then subjected to an air blast gas flame for four hours.

The area in immediate contact with the flame came to a bright cherry red which is generally considered indicative of a temperature of about 1500 degrees Fahrenheit. The other face of the block was then not too hot to be touched by the hand.

While under these conditions the blocks were deluged with cold water. No cracking or spalling of the blocks was apparent from the heat or from the cooling by water.

Respectfully submitted,

RSB:MB *H. H. Potts* ROBERT W. HUNT COMPANY.

INSULATION is basic.

INSULATION is the primary object of all building.

Housing has never meant more than an idea to separate that which needs protection, from the outside world.

The Esquimo's igloo, the gypsy's tent, the pioneer sod hut of the western plains, and on and up to and including today's ultra-modern, monumental structures, are examples of man's attempt to INSULATE from the climates and elements of the Great Outdoors.

Because structural materials have not provided the full requirements of INSULATION, special insulating materials have been developed, and worthy as they are for their purpose, their use constitute an imposing added burden financially in the total cost of construction.

WE ARE MANUFACTURING AND OFFERING POTTSCO LIGHT-WEIGHT BACK-UP UNITS FOR ALL TYPES OF CONSTRUCTION IN THIS TERRITORY, BECAUSE WE CAN GIVE YOU STRUCTURAL WALLS AND AT THE SAME TIME INSULATION AT ONE COST.

**Some other advantages of POTTSCO  
back-up units**

*Light-weight and easy to lay.*

*Extremely sound-proof.*

*Direct nailing or boring.*

*Plaster or stucco direct. Certain characteristics make these units especially an ideal plaster and stucco base.*

*Fire-proof.*

*Structural strength (Get stronger with age).*

*No contraction or expansion.*

*Very low absorption.*



"A Picture of a Story"

**Use POTTSCO units for**

*Apartments.  
Armories, Auditoriums, Rinks, Stadiums,  
Banks  
Office Buildings.  
Public Buildings and Institutions.  
Schools.  
Churches.  
Clubs and Lodge Buildings.  
Garages  
Hotels and Restaurants.  
Hospitals.  
Warehouses.  
Commercial and Industrial Buildings.  
Residences.  
Stores and Markets.  
Theatres.*

**AND WHEREVER ELSE THERE IS  
NEED FOR A SUPERIOR BACK-  
UP UNIT.**

WE ARE THE SOLE MANUFACTURERS OF POTTSCO BACK-UP UNITS IN THIS TERRITORY AND ARE ATTEMPTING TO RENDER A REAL SERVICE BY PROVIDING A SUPERIOR QUALITY PRODUCT AT COSTS WHICH MATERIALLY LESSEN THE TOTAL COST OF CONSTRUCTION. POTTSCO UNITS ARE MADE IN NINE STATES.

A TELEPHONE CALL, A CARD, A LETTER, will bring a representative to see you at your convenience, who will give you all the information you wish. We extend a cordial invitation to visit our plant and office and discuss this remarkable product and its uses.

## COMPRESSIVE AND ABSORPTION TESTS

The following reproductions of tests are representative of the many that have been made, which establish conclusively that POTTSCO meets all the standard building code requirements as to strength and absorption.

Copies of additional reports will be furnished on request.

**PITTSBURGH TESTING LABORATORY**  
PITTSBURGH, PA.

LABORATORY NO. 8704  
JOB NO. CB 386  
POTSCO  
COMPRESSION TESTS  
DATE 10-27-28

REPORT OF TEST OF 3 cells CONCRETE Building Blocks

By H. E. Potts & Co.  
Chicago, Illinois

Attested H.E. Co., Tuscola, Wisconsin

**COMPRESSION TEST**

Block	Actual	Standard Area Sq. Inch	Crushing Load Lbs.	Crushing Stress Lbs. Per Sq. Inch	Unit Load Lbs. Per Sq. Inch	Date Made	Test No.
2	7.88" x 16.00"	120.14	37,60	102,000	849	9-26-28	30

Crushed Vertical

PITTSBURGH TESTING LABORATORY  
A. G. E. Johnston

**MATERIALS TESTING LABORATORY**  
LEWIS INSTITUTE  
CHICAGO, ILL.  
October 18, 1928.

**COMPRESSION TEST OF CONCRETE BUILDING BLOCKS**

REQUIREMENT: F. E. Wharton & Co., Wharton, Ill.

DESCRIPTION: The blocks were nominal sized half blocks, each size being 14.0 in. x 7.8 in. There were three voids in each block and a void at each end of the block. The average dimensions of these voids were 4.6 in. long by 2.75 in. wide for the interior voids and 1.85 for the end voids. The total void area is 108.75 sq. in. The net (least) area is 67.60 sq. in.

METHOD OF TESTING: American Concrete Institute standard method used. Blocks were loaded on both faces with a 1:1 of uniform bedding mortar. They were then loaded in a universal testing machine, the loads being applied thru a spherical bearing block.

RESULTS OF TESTS:

Block Number	LOADS OF THE GROSS SECTION		Unit Load on Gross Area
	Area Gross	Total Load	
#1	106.75 sq. in.	128,150 lb.	1198 lb. per sq. in.
#2	"	115,640 lb.	1048 lb. per sq. in.
#3	"	118,540 lb.	1088 lb. per sq. in.
#4	"	106,400 lb.	988 lb. per sq. in.

Average Unit Load on the Gross Area 1088 lb. per sq. in.

Block Number	LOADS OF THE NET SECTION (actual stress on concrete)		Unit Load on Actual Net Area
	Area Net	Total Load	
#1	66.65 sq. in.	128,150 lb.	1800 lb. per sq. in.
#2	"	115,640 lb.	1680 lb. per sq. in.
#3	"	118,540 lb.	1770 lb. per sq. in.
#4	"	106,400 lb.	1598 lb. per sq. in.

Average Unit Load 1700 lb. per sq. in.

REMARKS: 600 lb. per sq. in. on gross section. All blocks passed. (This is per block to be used in 8 story buildings.) Net strength is 1700 lb. per sq. in. which compares very favorably with the 8000 lb. per sq. in. for concrete in reinforced concrete buildings.

A. G. E. Johnston

**PATZIG TESTING LABORATORIES**  
DES MOINES, IOWA

LAB. NO. 12088  
JOB NO. 1000  
POTSCO  
ABSORPTION TESTS  
DATE 10-27-28

REPORT OF TEST OF 3 cells CONCRETE Building Blocks

By H. E. Potts & Co.  
Chicago, Illinois

Attested H.E. Co., Tuscola, Wisconsin

**ABSORPTION TEST**

Block	Dry Weight Lbs.	Sat. Wt. Lbs.	Absorption Per Cent
1	37.46	38.10	15.0
2	37.06	37.68	15.0
3	37.00	37.64	15.7

Average 15.2

PITTSBURGH TESTING LABORATORY  
A. G. E. Johnston

**PITTSBURGH TESTING LABORATORY**  
PITTSBURGH, PA.

LABORATORY NO. 2916  
JOB NO. CB 3661  
POTSCO  
COMPRESSION TESTS  
DATE 1-2-29

REPORT OF TEST OF 8 x 8 x 16 POTBED BLOCK

By H. E. Potts & Co.  
Chicago, Illinois

Attested H.E. Co., Tuscola, Wisconsin

**ABSORPTION TEST**

Block	Dry Weight Lbs.	Sat. Wt. Lbs.	Absorption Per Cent
1	32.5	34.8	6.2

Average 6.2

A. G. E. Johnston



**PITTSBURGH TESTING LABORATORY**  
PITTSBURGH, PA.

FORM 480

H. H. Potts Co.  
Chicago, Illinois

LABORATORY NO. 5797  
JOB NO. Ch 3661  
FILE NO. 0304  
CUSTOMER'S ORDER  
DATE 10-27-28

REPORT OF TEST OF 3 CONCRETE Building Blocks  
FOR

Armbruster, Aurora, Illinois

**COMPRESSION TEST**

Mark	Actual	Sectional Area Sq. Inch	Weight	Crushing Load Lbs.	Crushing Strength Lbs Per Sq. Inch	Date Made	Age Days
1	15.50x7.75	120.14"	35.50	84000	700	9-15-28	42

Crushed Vertical

PITTSBURGH TESTING LABORATORY

A. G. E. Johnston

HHP CO. INFORMATION REPORT #110

COPY

PITTSBURGH TESTING LABORATORY  
Pittsburgh, Pa.

Chicago Office Report

Zion Institution & Industries,  
Zion, Illinois.

REPORT OF TEST OF 16x8x8" POTTS CO. Blocks.

COMPRESSION TEST THREE CELLS - Crushed Vertical.

Mark	Sq. inches Sectional Area	Crushing Load Pounds	Crushing Strength lbs per sq. in. D.A.	Actual Siro	Age Days
1	122.06"	130,000	1,065	15.7x7.75"	30
2	122.06"	146,000	1,196	15.7x7.75"	30
3	122.06"	176,000	1,442	15.7x7.75"	30

	DRY (a)	Weight Saturated (b)	Absorption per cent b-a x 100 a
1	29.00 lbs.	34.75 lbs.	19.8 per cent
2	29.00 lbs.	35.50 lbs.	22.4 per cent
3	28.75 lbs.	34.62 lbs.	20.1 per cent

Blocks for this test were selected from yard by Mr. Walter Wablick,  
Building Commissioner, Waukegan, Illinois.

(Official copy of this report is on file in office of H. H. Potts  
Company, Builders Building, Chicago, Illinois.)

**INDUSTRIAL COMMISSION**  
OF  
WISCONSIN

STATE CAPITOL ANNEX  
MADISON

August 20, 1929

Alsted Mfg. Company,  
Truesdell, Wisconsin

Gentlemen:

We have a test report on test of your 8 x 8 x 16 inch  
three cell granulated slag concrete block made on September  
26th, 1928 and on which the compression test was made on  
November 1st, 1928.

The blocks were tested on the 8 x 16 inch face with  
cells vertical. The blocks were marked AMCO stencilled on  
each block.

According to the results of the test your blocks satis-  
factorily passed the test required by the building code and  
are, therefore, acceptable for use in load-bearing and outside  
walls in public buildings and places of employment in the state  
of Wisconsin.

Yours very truly,

INDUSTRIAL COMMISSION

ENC:MY

E. W. Callen  
Building Inspector.

SAFETY AND SANITATION  
DEPARTMENT

E. WEA. KROWN, ENGINEER

DIVISIONS  
BUILDING  
ELECTRICAL  
ELEVATOR  
FACTORY INSPECTION  
FIRE PREVENTION  
HEAT AND COLD

COMMISSIONERS  
FRED M. WILCOX, CHAIRMAN  
R. S. KRUTSON  
VICTOR WABICK  
A. J. ALTMAYER, SECRETARY

PITTSBURGH TESTING LABORATORY  
INSPECTING ENGINEERS AND CHEMISTS  
PITTSBURGH, PA.

OFFICE  
NEW YORK  
CHICAGO  
PHILADELPHIA  
BOSTON  
CLEVELAND  
DETROIT  
PITTSBURGH  
BALTIMORE

CHICAGO OFFICE  
ROOMS 1111-1115 ENGINEERING BUILDING  
205 WEST WACKER DRIVE  
H. H. HOLMES, MANAGER

REPRESENTED  
BOSTON  
SAN FRANCISCO  
LOS ANGELES  
SEATTLE  
PORTLAND  
MILWAUKEE  
TOMBIGNE  
MONTREAL  
OTTAWA  
TORONTO  
WINDSOR  
QUEBEC

Refer to File No. Ch 5661

Lab. # 5742

September 29, 1928

H. W. Potts Company  
Chicago, Illinois

16.00" x 8.00" x 8.00" blocks

Made by Festner Forest, Park, Illinois

THREE CELLS		CRUSHED HORIZONTAL	
MARK	DIMENSIONS INCHES	GROSS AREA SQ. INCHES	CRUSHING LOAD LBS.
#2	15.75 x 8.00	126.00	110,000
#3	"	126.00	90,000
		CRUSHING STRENGTH LBS. PER SQ. IN. GROSS AREA	
		875	
		714	

PITTSBURGH TESTING LABORATORY

5 copies:

PITTSBURGH TESTING LABORATORY  
PITTSBURGH, PA.

H. W. Potts Company  
Chicago,

LABORATORY NO. 5935  
JOB NO. Ch 3661  
FILE NO. 0304  
CUSTOMER'S ORDER  
DATE 1-18-29

REPORT OF TEST OF 16 x 8 x 8 CONCRETE BLOCKS  
Concrete Specialty FOR

H. W. Potts Co.

3 Cells		COMPRESSION TEST		Crushed Vertical	
Lab	ACTUAL SIZE	Crushing Load Lbs.	Crushing Strength Lbs. Per Sq. Inch	GROSS AREA	Net Area
2 A	15.75 x 8.00	153000	1214	126.00	
2 B	15.75 x 8.00	158500	1258	126.00	

A. G. E. Johnston

Information Report No. 104

COPY

The University of Wisconsin  
College of Engineering - Department of Mechanics  
Laboratory for Testing Materials

Result of tests on blocks,  
made for: Alsted Mfg. Company  
Samples selected by: Manufacturer  
Sorting or feeding: None  
Grinding or sorting: None  
Additional information: Made Sept. 26, 1928, POTTS CO. 1:8 Mix. Mixed 3 minutes  
dry; 2 minutes wet. Universal stripper machine.

Block	Actual Size	Gross Area	Total Load	Load per square inch, gross area
1	7.9x18.7"	126.00"	90,880	730
2	7.9x18.7"	126.00"	104,780	840
3	7.9x18.7"	126.00"	1 990	970

Block No. 1 - 14.0 per cent.  
Block No. 2 - 18.0 per cent.  
Block No. 3 - 14.2 per cent.

Net weight about 110 lbs per cubic foot. Absorption limit about 15%

THE UNIVERSITY OF WISCONSIN

(Signed) Paul Y. Hertso Jr.,

Observer.

(Official signed copy of this report is on file in office of H. W. Potts  
Company, Builders Building, Chicago, Illinois.)

COMPRESSION TESTS OF 8 x 8 x 16" POTTS CO. UNITS  
Tests made by Portland Cement Association Laboratory

Location of Plant	Manufacturer	Size	Compressive Strength lbs. per square inch	
			Gross Area	Net Area
Shelton, Illinois	F. E. Shelton Co.	8x8x16"	1070	1915
Shelton, Illinois	F. E. Shelton Co.	8x8x16"	1030	1825
Milwaukee, Wisc.	Economy Concrete Products Company	8x8x16"	885	1585
Milwaukee, Wisc.	Economy Concrete Products Company	8x8x16"	1968	1968
Cleveland, Ohio	Cleveland Roofing Tile Company	8x8x16"	717	1160
Boyle, Mich.	C. A. Milcox	8x8x16"	893	1431
Waukegan, Michigan	Marble Cement & Coal Co.	8x8x16"	1338	2160
Kalamazoo, Mich.	Kalamazoo Cement Prod. Co.	8x8x16"	937	
Boston Harbor, Mich.	B. A. Crandall	8x8x16"	846	1318
Terre, Indiana	Elmer Concrete Prod. Co.	8x8x16"	826	1431
Devanport, Iowa	Cement Products Company	8x8x16"	640	
Detroit, Michigan	Standard Building Prod. Co.	8x8x16"	966	139
Truesdell, Wisc.	Alsted Manufacturing Co.	8x8x16"		



The University of Wisconsin  
College of Engineering Department of Mechanics  
Laboratory for Testing Materials

April 6, 1929.

Results of Freezing and Thawing Tests on Pottsoo Concrete Building Blocks, made for the Economy Concrete Products Co., Wauwatosa, Wisconsin.

The purpose of these tests was to determine the effect of repeated freezing and thawing on the strength and absorption of Concrete Building Blocks made with Pottsoo aggregate and Portland cement, and also to note the loss in weight and the spalling or other surface deterioration due to the freezing and thawing.

Twenty blocks, all 8x8x16-in., 3 cell, were received at the laboratory on January 10, 1929, all of the blocks having been sealed by Mr. C. W. Porter, for the Wisconsin Concrete Products Association. The card accompanying the blocks states that they were made on December 7, 1928; aggregate, Pottsoo, all through 1/2-in. screen; 1:9 mix; Ideal 21 cu. ft. batch mixer; 3 minutes dry, 3 minutes wet; anchor stripper; cured 18 hours in steam. All blocks were stencilled on the end with the manufacturer's mark, an E in a hexagon.

Fifteen of the blocks were used in these tests, five of them being subjected to 100 reversals of freezing and thawing and then tested for strength, absorption and loss in weight, five of them being tested at the beginning of the run for strength and absorption in the regular manner, and the other five being held in the laboratory until the freezing and thawing run was completed, when they also were tested for strength and absorption in the regular manner. The expectation was that this would give an indication of the normal increase in strength of the blocks under ordinary conditions during the time required to complete the freezing and thawing on the five blocks being tested in that way.

The blocks for each test were picked at random as follows. The twenty blocks were arranged in order of seal numbers and beginning at the lowest number the first, fifth, ninth, thirteenth and seventeenth were selected for freezing and thawing and numbered 1 to 5, inclusive. Every fourth block beginning with the second was selected for testing at the beginning of the freezing run, these blocks being numbered 6 to 10, inclusive. Every fourth block beginning with the third was selected for testing at the end of the freezing run, these blocks being numbered 11 to 15, inclusive.

The attached regular printed report blanks, sheets 1, 2 and 3, give the results of the regular strength, voids and absorption tests on the three sets of blocks, the absorption data given thereon for blocks 1 to 5 being for the blocks before the freezing test was started. Absorption on these blocks after the freezing test was completed was also determined and is given later on in this part of the report. Of the attached

Sheet 1 gives report on blocks tested before freezing began.  
" 2 " " " " after " ended.  
" 3 " " " " " subjected to freezing and thawing.

Economy Conc. Prod. Co., Freezing Test,

#2.

Actual freezing was begun on January 17, 1929 and was completed on March 26, 1929. When possible the freezing was accomplished by placing the blocks outside the laboratory, but when the outside temperature was not sufficiently low the blocks were frozen in the laboratory freezer. 100 complete reversals of freezing and thawing were made, the thawing being accomplished by placing the frozen blocks in water and leaving them in this water until thoroughly thawed out. The blocks were saturated with water before being frozen for the first time, being in water for 72 hours, and were always thereafter placed in the freezing atmosphere immediately upon being removed from the water in which they had been thawed. The water in which the blocks were thawed out was heated somewhat by running live steam into it, so as to accelerate the thawing, but no attempt was made to raise the water very much above the regular laboratory temperature of about 70°F.

In order to determine whether the blocks were completely frozen or thawed as the case might be a dummy specimen of the same material was used, in which a hole had been drilled to a point in the middle of the thickest web, half way from the top to the bottom of the block. This hole was partly filled with refrigerator machine oil having a low freezing point and a thermometer of the immersion type placed therein, the opening to the hole being tightly corked.

Readings were taken of temperatures as follows, the average of the 100 readings being given in each case:

Temp. of freezer at beginning of freezing,	Average 14° F.
" " " " end " "	13
" " " " " " " "	17
" " " " " " " "	76
" " " " " " " "	94
" " " " " " " "	61

Towards the middle of the freezing run block 2 began to spall on the bottom face, as made, and this spalling progressed until nearly all of this face had crumbled away to a depth of about one inch, after which this spalling practically ceased, there being very little deterioration during the last fifteen or twenty reversals. This block had a double cross (#) scratched on one end and the manufacturer states that this was one of a lot of rejected blocks which had been included in this lot of blocks by mistake. In addition to the bad spalling of the bottom of this block there was considerable surface deterioration on the sides and ends to a maximum depth of about 1/4-in., the total area so affected being about 100 square inches on the sides and ends. In order to make a strength test of this block it was necessary to build up the damaged face with a 1:1 Lumite mortar, and it will be noted that this block was the only one tested which was below the 700 pounds per square inch required by the Code, either before or after freezing, and also that it was the only block having a material loss in weight after freezing.

Of the other four blocks that were subjected to the freezing test, there was some surface deterioration to a depth of only about 1/16-in. or less, and this did not show up at all until about 90 reversals had been made. The area affected was approximately 25 to 30 square inches for block 3, 50 square inches for block 1, and 75 square inches for block 4 and 5, most of it being on the ends or the sides near the ends.

WEATHERING TESTS ON POTTSO

The University of Wisconsin made the standard weathering test on POTTSO building units which is reflected by the report on this and the following page.

In the approximate six years that POTTSO building units have been used in general construction, no disintegration tendencies have developed in any job.

The report speaks for itself and we believe definitely establishes the longevity of POTTSO construction.

Economy Conc. Prod. Co., Freezing Test.

#3.

The data for absorption and loss in weight of blocks 1 to 5 after freezing is as follows:

Block	Weights after freezing Dry lb.	Wet lb.	% Absorption	Loss in dry weight due to freezing lb.	%
1	33.7	39.9	18.4	0.6	1.8
2	30.0	36.1	20.3	2.9	8.8
3	34.1	40.1	17.6	0.1	0.3
4	32.6	39.2	20.3	0.6	1.8
5	33.8	40.0	18.3	0.3	0.9

It will be noted from the strength tests that the strength of the five blocks 11 to 15 which were stored in the laboratory and tested at end of the freezing period was less than the strength of the blocks 6 to 10 which were tested at the beginning of the freezing period. While blocks cured in steam gain in strength only very slightly with age there should be no retrogression in strength. All of the blocks were tested on the same machine and in the same manner. An examination of the dry weights of the various blocks indicates that the strength varies with the dry weight which shows the value of good tamping and may account for the strength difference mentioned. Blocks 1 to 5 which went through the freezing test had an average strength of 1064 pounds per square inch and an average dry weight of 34.0 pounds, defective block 2 being omitted in each case; blocks 6 to 10 which were tested at the beginning of the freezing run had an average strength of 1082 pounds per square inch and an average dry weight of 34.9 pounds; blocks 11 to 15 which were tested at the end of the freezing run had an average strength of 973 pounds per square inch and an average dry weight of 34.0 pounds. (Comparisons should be on the basis of dry weights at the same time.) Certainly in the case of blocks 1, 3, 4 and 5 there is no indication that the repeated freezing and thawing had any bad effect on the strength.

Detailed data of the dates and hours of each reversal, with the individual temperatures, etc., together with a sketch of each block showing the extent of any surface deterioration, are on file in this office.

Paul F. Norton, Jr.,  
Asst. Prof. of Mechanics,  
621 Engineering Building.



**THE UNIVERSITY OF WISCONSIN**  
COLLEGE OF ENGINEERING — DEPARTMENT OF MECHANICS Sheet 1.  
Laboratory for Testing Materials

Results of Tests on Pottsoo Conc. Building Blocks Size and Type 8x8x16-in., 3 cell.  
Made for Economy Concrete Products Co. Address Wausau, Wis.  
Samples selected by G. M. Porter, for WCPA  
Sourcing or facing None  
Brands or Marks E in box, stencilled on end.  
Additional Information Made December 7, 1928; aggregate, Pottsoo; all through 1/2-in. screen; 1:9 mix; ideal 21 cu.ft. batch mixer, 3 minutes dry, 3 minutes wet; anchor stripper; cured 18 hours in steam.  
These five blocks picked at random from lot sent for freezing tests, and tested at time freezing test was begun on other blocks.

(B) COMPRESSION TEST DATA

Loaded on 8x16-in. faces, cells vertical Bedded in #5.510000.

Mark or Number	6	7	8	9	10
Serial Number	WCPA 1256	1262	1266	1270	1274
Weight of Block (lb.)	37.7	37.2	37.9	36.8	36.7
Height (inches)	7.7	7.7	7.7	7.7	7.7
Dimensions of Loaded Cross Section (in.)	8.0x15.75	8.0x15.75	8.0x15.75	8.0x15.75	8.0x15.75
Area of Section (sq. in.)	126.0	126.0	126.0	126.0	126.0
MAXIMUM LOAD (lb.)	149,250	131,750	140,550	132,900	126,600
ULTIMATE STRENGTH (lb. per sq. in.)	1180	1050	1110	1050	1000

Character of Fracture #6, complete shear; #8, shear except one end; others, shear except one side. Appearance OK.  
Date of Compression Test January 23, 1929

(C) VOIDS TEST DATA

Mark or Number	6	7	8	9	10
Section Area (sq. in.)	126.0	126.0	126.0	126.0	126.0
Number of Cells	3, 1x6.2 (14.0)	same	same	same	same
Cell Dimensions (in.)	1.3x4.0 (5.3)	same	same	same	same
Cell Area (sq. in.)	5.2	5.2	5.2	5.2	5.2
PERCENT VOIDS	42	42	42	42	42

(D) ABSORPTION TEST DATA (Weight in Pounds)

Mark or Number	6	7	8	9	10
Weight after immersion in water — 30 hr.	40.9	40.4	40.9	40.0	40.4
Weight, Dry Specimen	36.6	34.6	34.9	34.7	34.6
Gain in Weight	4.3	5.8	6.0	5.3	5.8
PERCENT ABSORPTION	14.9	16.8	17.2	15.3	16.8
Net weight about 100 lb./cu.ft.	100	100	100	100	100

We reserve the right to publish the results of all tests made at this laboratory. We withhold names of parties from publication if requested.

File — The Wisconsin Building Code requirements are 100 lb. per cu. ft. each strength and not over 12 per cent absorption.

**THE UNIVERSITY OF WISCONSIN**  
COLLEGE OF ENGINEERING — DEPARTMENT OF MECHANICS Sheet 2.  
Laboratory for Testing Materials

Results of Tests on Pottsoo Conc. Building Blocks Size and Type 8x8x16-in., 3 cell.  
Made for Economy Concrete Products Co. Address Wausau, Wis.  
Samples selected by G. M. Porter, for WCPA  
Sourcing or facing None  
Brands or Marks E in box, stencilled on end.  
Additional Information Made December 7, 1928; aggregate, Pottsoo; all through 1/2-in. screen; 1:9 mix; ideal 21 cu.ft. batch mixer, 3 minutes dry, 3 minutes wet; anchor stripper; cured 18 hours in steam.  
These five blocks picked at random from lot sent for freezing tests, and tested at the time the freezing test on the freezing specimens was completed.

(B) COMPRESSION TEST DATA

Loaded on 8x16-in. faces, cells vertical Bedded in #5.510000.

Mark or Number	11	12	13	14	15
Serial Number	WCPA 1259	1263	1267	1271	1275
Weight of Block (lb.)	34.8	34.1	36.2	35.9	35.6
Height (inches)	7.7	7.7	7.7	7.7	7.7
Dimensions of Loaded Cross Section (in.)	8.0x15.75	8.0x15.75	8.0x15.75	8.0x15.75	8.0x15.75
Area of Section (sq. in.)	126.0	126.0	126.0	126.0	126.0
MAXIMUM LOAD (lb.)	118,900	108,050	136,050	127,300	110,900
ULTIMATE STRENGTH (lb. per sq. in.)	945	860	1170	1010	880

Character of Fracture #11 & 12, shear one side; others, complete shear. Appearance OK.  
Date of Compression Test April 2, 1929

(C) VOIDS TEST DATA

Mark or Number	11	12	13	14	15
Section Area (sq. in.)	126.0	126.0	126.0	126.0	126.0
Number of Cells	3, 1x6.2 (14.0)	same	same	same	same
Cell Dimensions (in.)	1.3x4.0 (5.3)	same	same	same	same
Cell Area (sq. in.)	5.2	5.2	5.2	5.2	5.2
PERCENT VOIDS	42	42	42	42	42

(D) ABSORPTION TEST DATA (Weight in Pounds)

Mark or Number	11	12	13	14	15
Weight after immersion in water — 30 hr.	39.9	39.5	41.0	41.0	40.2
Weight, Dry Specimen	33.4	32.6	34.9	34.6	34.2
Gain in Weight	6.5	6.9	6.1	6.4	6.0
PERCENT ABSORPTION	19.4	20.8	17.5	18.5	17.5
Net weight about 100 lb./cu.ft.	100	100	100	100	100

We reserve the right to publish the results of all tests made at this laboratory. We withhold names of parties from publication if requested.

File — The Wisconsin Building Code requirements are 100 lb. per cu. ft. each strength and not over 12 per cent absorption.

**THE UNIVERSITY OF WISCONSIN**  
COLLEGE OF ENGINEERING — DEPARTMENT OF MECHANICS Sheet 3.  
Laboratory for Testing Materials

Results of Tests on Pottsoo Conc. Building Blocks Size and Type 8x8x16-in., 3 cell.  
Made for Economy Concrete Products Co. Address Wausau, Wis.  
Samples selected by G. M. Porter, for WCPA  
Sourcing or facing None  
Brands or Marks E in box, stencilled on end, & scratched on end of #2.  
Additional Information Made Dec. 7, 1928; aggregate, Pottsoo; all through 1/2-in. screen; 1:9 mix; ideal 21 cu.ft. batch mixer; 3 minutes dry, 3 minutes wet; anchor stripper; cured 18 hours in steam.  
These five blocks picked at random and subjected to 100 reversals of freezing and thawing, after which they were weighed for loss in weight and broken for strength in regular way. Absorption data is for blocks before freezing. See other part of report for weight and absorption after freezing.

(B) COMPRESSION TEST DATA

Loaded on 8x16-in. faces, cells vertical Bedded in #5.510000.

Mark or Number	1	2	3	4	5
Serial Number	WCPA 1288	1261	1265	1269	1273
Weight of Block (lb.)	36.5	35.0	37.4	36.5	36.3
Height (inches)	7.7	7.7	7.7	7.7	7.7
Dimensions of Loaded Cross Section (in.)	8.0x15.75	8.0x15.75	8.0x15.75	8.0x15.75	8.0x15.75
Area of Section (sq. in.)	126.0	126.0	126.0	126.0	126.0
MAXIMUM LOAD (lb.)	130,850	82,750	148,850	134,000	114,150
ULTIMATE STRENGTH (lb. per sq. in.)	1100	660	1180	1065	910

Character of Fracture #2, complete shear, usually; #1, shear except one end; others, shear one side; appearance OK except for #2.  
Date of Compression Test April 8, 1929

(C) VOIDS TEST DATA

Mark or Number	1	2	3	4	5
Section Area (sq. in.)	126.0	126.0	126.0	126.0	126.0
Number of Cells	3, 1x6.2 (14.0)	same	same	same	same
Cell Dimensions (in.)	1.3x4.0 (5.3)	same	same	same	same
Cell Area (sq. in.)	5.2	5.2	5.2	5.2	5.2
PERCENT VOIDS	42	42	42	42	42

(D) ABSORPTION TEST DATA (Weight in Pounds)

Mark or Number	1	2	3	4	5
Weight after immersion in water — 30 hr.	40.1	39.5	40.5	39.7	40.0
Weight, Dry Specimen	34.8	32.9	34.2	32.1	34.1
Gain in Weight	5.3	6.6	6.3	7.6	5.9
PERCENT ABSORPTION	15.9	20.5	17.8	23.4	17.3
Net weight about 100 lb./cu.ft.	100	100	100	100	100

We reserve the right to publish the results of all tests made at this laboratory. We withhold names of parties from publication if requested.

File — The Wisconsin Building Code requirements are 100 lb. per cu. ft. each strength and not over 12 per cent absorption.



**POTTSCO** is the ideal aggregate for lightweight concrete, shattering under impact and resisting the wearability of changing conditions. It is made of 100% Portland Cement, 10% Calcium Oxide, 10% Silica, and 4% Alumina Oxide. The mixture contains a very low amount of water, which is absorbed by the aggregate in these proportions in any concrete.

It is clean, sharp and of a hard crystalline nature. It is easily compacted with government specifications, giving 100% strength in concrete. It is very hard, light and sand for 400-600 and weighs less than 75 pounds per cubic foot. It will produce a high compressive strength, over 1,000 pounds per square inch with a 1 to 7 mix.

Do not confuse POTTSCO with low grade slag aggregates made by the low water or ordinary slag process. Such slag will not give the compressive strength called for by government or other good engineering specifications.

POTTSCO is also ideal for back-up block, partition and the base of structural steel. With a mix of 1 to 7 it will hold a concrete strength in tensile units of 10,000 psi. It is a high quality material with a low loss of only 10 to 15% in strength. The material is very hard and will not be crushed by an ordinary material.

POTTSCO offers the savings in first cost and in labor of application, but more important with it is the low material cost for the purpose.

**THE POTTSCO CORPORATION**  
 Number One North La Salle Street  
 CHICAGO

# REVISED REPORT

ROBERT W. HUNT COMPANY, ENGINEERS

CHICAGO PITTSBURGH NEW YORK  
 LONDON ST. LOUIS SAN FRANCISCO

## ANALYSIS OF "POTTSCO"

Chicago, Illinois  
 November 10, 1930

FILE NO. 23932-2 ORDER B-20110  
 REPORT C-490-A

H. H. Potts Company  
 Builders Building  
 Chicago, Illinois

Gentlemen:

A Sample marked "PottSCO" was submitted by the H. H. Potts Company to our laboratory for chemical analysis:

### Analysis Water Soluble:

% Total Solids.....	0.040
% Chlorine.....	Trace
% Sulphate.....	Trace
% Sulphides.....	Trace
Reaction.....	Neutral

### Analysis of White Sample:

% Silica.....	34.00
% Iron Oxide.....	4.95
% Aluminum Oxide.....	14.05
% Calcium Oxide.....	38.83
% Calcium Sulphide.....	2.42 (Calculated from Sulphide Sulphur)
% Magnesium Oxide.....	3.24
% Loss on Ignition.....	Nil
% Sulphuric Anhydride.....	1.42

The water soluble analysis shows a very small percentage of soluble matter. The low percentage of water soluble as well as the neutral reaction indicates that the sample submitted would not cause corrosion when used as an aggregate for concrete in contact with reinforced steel.

A piece of polished steel showed no noticeable deterioration on being placed in boiling water containing portions of pulverized "PottSCO".

Respectfully submitted:

ROBERT W. HUNT COMPANY

*C. E. Plummer*  
 Technical Director,  
 Chemical & Metallurgical  
 Engineering

Plummer

ROBERT W. HUNT COMPANY, ENGINEERS  
 CHICAGO PITTSBURGH NEW YORK  
 LONDON ST. LOUIS SAN FRANCISCO

Chicago, Illinois,  
 August 31, 1928.

FILE NO. 23932-1 ORDER B-3845  
 REPORT 26476

H. H. Potts Company,  
 Builders Building,  
 Chicago, Illinois.

Gentlemen:-

The following is result of heat test, authorized by your letter of August 25th, on two-8x8x16" building blocks, which were delivered to our laboratory by your representative.

The test performed was in the nature of a preliminary observation and no absolute temperature determinations were made.

Blocks under test were surrounded to a certain extent by other blocks in order to confine the heat as much as possible and were then subjected to an air blast gas flame for four hours.

The area in immediate contact with the flame came to a bright cherry red which is generally considered indicative of a temperature of about 1800 degrees Fahrenheit. The other face of the block was then not too hot to be touched by the hand.

While under these conditions the blocks were deluged with cold water. No cracking or spalling off of blocks was apparent from the heat or from the cooling by water.

Respectfully submitted,  
 ROBERT W. HUNT COMPANY.

RSB:MB *W. B. Brown*

# PITTSBURGH TESTING LABORATORY PITTSBURGH, PENNA. ESTABLISHED 1907

ORDER NO. Ch-5823  
CLIENT'S NO.

LABORATORY NO. 163521  
FILE NO. 6774.3  
August 23, 1933.

## REPORT

### COMPRESSION AND FIRE TESTS OF POTTSICO CONCRETE FOR

THE POTTSICO CORPORATION, 1 NORTH LA SALLE STREET, CHICAGO, ILLINOIS

#### PURPOSE OF TESTS

The foregoing types of test were conducted for the purpose of determining the modulus of elasticity in compression and ultimate compression strength of concrete made up of Pottisco concrete in varying proportions of Pottisco material.

The fire tests were made for determining the protection which Pottisco concrete, in the same varying amounts, would afford structural steel shapes embedded in same.

#### DESCRIPTION OF TEST SPECIMENS

##### COMPRESSION TEST SPECIMENS

For the compression test 6" x 12" specimens were cast in the presence of a Pittsburgh Testing Laboratory Inspector, three different mixes being selected and two cylinders of each mix prepared for test in the usual recognized manner covering this type of test specimen.

There were three different mixes used in the preparation of the cylinders, as follows:-

##### MIX NO. 1 - - - 1-8 By Volume

Cement-One Bag (94 Pounds)  
Pottisco Aggregate - 8 Cu. Ft. (at 48  
pounds per Cu. Ft.)  
Water Added - 7 Gallons per bag

This report is rendered upon the condition that it is not to be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special permission in writing.

# PITTSBURGH TESTING LABORATORY PITTSBURGH, PENNA. ESTABLISHED 1907

ORDER NO. Ch-5823  
CLIENT'S NO.

LABORATORY NO. 163521  
FILE NO. 6774.3

## REPORT

### MIX NO. 2 - - - 1-6 By Volume

Cement-1.16 Bags (109 Pounds)  
Pottisco Aggregate - 6.96 Cu. Ft. (at 48  
pounds per Cu. Ft.)  
Water Added - 7.76 Gallons per bag

### MIX NO. 3 - - - 1-4 By Volume

Cement-One Bag (94 Pounds)  
Pottisco Aggregate - 4 Cu. Ft. (at 48  
pounds per Cu. Ft.)  
Water Added - 5 gallons per bag

A sieve analysis of the Pottisco aggregate used in each of the foregoing mixes is as shown below:-

3/8"	0.0 Percent Retained
No. 4	1.5
No. 8	7.5
No. 14	37.0
No. 20	60.0
No. 28	78.0
No. 48	94.0
No. 80	96.0
No. 100	97.0
No. 100	3.0 Percent Passing

#### FIRE TEST SPECIMENS

The fire test specimens consisted of three blocks of Pottisco concrete each 10" x 10" x 14" on a side and representing the three different mixes as used in the preparation of the 6" x 12" cylinders tested for compression strength. These fire test specimens were cast around a 6" x 6" column weighing 21 pounds per foot and embedded vertically in the center of the block, with respect to the long axis, the beam extending to within 2" of the upper and lower surface of the block and the ends of the steel beam protected by the concrete which was brought flush with the top and bottom face of the block.

-2-

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# PITTSBURGH TESTING LABORATORY PITTSBURGH, PENNA. ESTABLISHED 1907

ORDER NO. Ch-5823  
CLIENT'S NO.

LABORATORY NO. 163521  
FILE NO. 6774.3

## REPORT

The compression and fire test specimens were shipped to our laboratory where they were allowed to cure in open air at room temperature for a period of 28 days. At the expiration of the 28 day period the blocks were thoroughly dried out in a heating hood until they had reached a constant weight after which period they were immediately tested.

#### RESULTS

##### COMPRESSION STRENGTH TEST

Compression strength tests were made on each set of cylinders submitted, one of each mix being tested in the usual manner by crushing at the rate of .06" per minute and the ultimate strength determined. The mate to each cylinder was tested for modulus of elasticity as well as ultimate compression strength. It is mentioned that the crushing test was made on the same day as the companion fire test specimen was tested, one day's time being required for each fire test, as will be described. Results of compression strength tests are as follows:-

##### COMPRESSION TEST OF 6" X 12" CYLINDERS USING POTTSICO AGGREGATE

CYLINDER NUMBER	CRUSHING LOAD POUNDS	CRUSHING LOAD LBS. PER SQ. IN.	AGE DAYS
1A	33,060	1170	42
1B*	32,300	1147	42
		1158 - Average	
2A*	47,400	1676	43
2B	44,800	1574	43
		1625 - Average	
3A*	51,000	1804	44
3B	72,900	2580	44
		2192 - Average	

\* These cylinders used for the determination of Modulus of Elasticity.

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# PITTSBURGH TESTING LABORATORY PITTSBURGH, PENNA. ESTABLISHED 1907

ORDER NO. Ch-5823  
CLIENT'S NO.

LABORATORY NO. 163521  
FILE NO. 6774.3

## REPORT

### MODULUS OF ELASTICITY OF CONCRETE

LOAD LBS. PER SQ. IN.	NO. 1	NO. 2	NO. 3
250	720,000	990,000	1,250,000
500	700,000	975,000	1,250,000
750	635,000	940,000	1,260,000
1000	525,000	860,000	1,240,000
1250		750,000	1,170,000
1500			1,080,000

#### METHOD OF CONDUCTING FIRE TEST

Each of the fire test specimens were, in turn, tested for fire resistance by placing them in a gas fired furnace and heating specimen in accordance with the recognized practice specified by the American Society for Testing Materials, the time temperature curve being followed, which curve covers fire tests for building materials.

Thermo-couples were placed at points indicated at the lower right hand portion of blue print diagrams, figures 1, 2 and 3, attached hereto, and the temperature recorded by means of a Potentiometer at frequent intervals during the tests.

By reference to these diagrams, it will be observed that the American Society for Testing Materials ideal curve is shown in dotted lines.

After placing each block, in turn, in the gas furnace with the thermo-couples welded to the steel at points 1 and 2 and embedded in the concrete at point 3 and properly insulated, the temperature was gradually raised in the furnace and controlled, so that it matched, as nearly as possible, the ideal curve as shown in A. S. T. M. Specifications C19-28T, which covers tentative specifications for fire tests of building construction and materials. It is mentioned that these specifications are similar to those which have been approved by

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This report is rendered upon the condition that it is not to be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special permission in writing.



# PITTSBURGH TESTING LABORATORY

PITTSBURGH, PENNA.  
ESTABLISHED 1904

ORDER NO. Ch-5823  
CLIENT'S NO.

LABORATORY NO. 163521  
FILE NO. 8774.3

## REPORT

the American Standards Association and which are followed generally in similar investigations.

Attached photograph, Plate "A", shows the appearance of blocks 1, 2 and 3 with insulated thermo-couple leads, prior to testing.

## SUMMARY OF RESULTS

### COMPRESSION TESTS

Results of compression tests indicate a unit compression strength ranging from an average of 1138 pounds for a 1-8 mix to 2192 pounds for a 1-4 mix, the strength of mix No. 2 averaging 1628 pounds or midway between that indicated for mixes 1-4 and 1-8.

The same relationship also holds good for modulus of elasticity values, the values ranking in the same order as the ultimate compression strength of each mix.

### FIRE TESTS

Tests were discontinued when steel temperature reached 1000°F. in view of results made by the Bureau of Standards in load tests under heat of Gypsum protected columns. Results of these tests which appear in the Bureau of Standards, Journal of Research for June 1933 and indicate buckling when the temperature of the steel had reached 800°F. to 1200°F. From these results we considered that failure would have occurred at a flange temperature of 1000°F.



PLATE "A"  
APPEARANCE OF BLOCKS BEFORE FIRE TEST.

## CONCLUSIONS

The following conclusions may be drawn from the results of these tests:-

### COMPRESSION STRENGTH TESTS

- A. An average strength of 2200 pounds per sq. in. is indicated for Pottseco Concrete when mixed in the proportion of 1 part of cement to 4 parts of Pottseco by volume and using 7 gallons of water per sack of cement.

### MODULUS OF ELASTICITY

- A. The modulus of elasticity in compression of Pottseco when mixed in the proportion of 1 part of cement to 4 parts of Pottseco by volume and using 7 gallons of water per sack of cement, averages 1,250,000 pounds per sq. in. for working stresses up to 750 pounds per sq. in. This would give a value of "n" for engineering calculations of 1 to 24 where "n" is the ratio of modulus of elasticity of steel to concrete.

### FIRE TESTS

- A. The difference between the mixes in the fire test are not as marked as the variation in results obtained in the compression strength tests. The elapsed time for the temperature to reach 1000°F. at the flange of block No. 1, representing a 1-8 mix by volume, was not very much less than the time required for the flange of the "H" beam to reach the same temperature in block No. 3, the latter representing a 1-4 mix.

It would appear that if Pottseco Concrete is intended as a fire-protecting material only, that a 1-8 mix by volume would answer the purpose almost equally as well as the richer, 1-4 mix by volume.

On the other hand, however, we would recommend the Pottseco 1-4 mix by volume in case the concrete is to be used for load bearing purposes owing to its higher compressive strength and greater rigidity than the leaner mixes.

Respectfully submitted,

PITTSBURGH TESTING LABORATORY

*J. W. Reifschneider*  
J. W. Reifschneider  
Engineer of Tests.

# ACOUSTICAL

The accompanying report on sound transmission made by the Riverbank Laboratories, Geneva, Illinois, probably the outstanding authority on acoustics of building materials, while shown in technical form, interprets itself to establish that POTTSCO has high acoustical properties and POTTSCO light-weight concrete deserves full consideration of its merit wherever acoustical qualities are needed.

## Riverbank Laboratories Geneva, Ill.

*Department of Acoustics*

INFORMATION  
REPORT  
#115

### Report on Sound Transmission Tests

POTTSCO Block Partition  
for the  
H. H. Potts Company

The partition was built in one of the openings of the Sound Chamber of the Riverbank Laboratories, of the 8x8x16" POTTSCO block, laid in lime and Portland cement mortar. The blocks were plastered on each side with a brown and finishing coat  $\frac{1}{2}$ " thick, of gypsum plaster. The tests were conducted according to the standard Reverberation Method employed in this laboratory, and described in various published papers. The following table gives the logarithmic reduction factor for each of the 17 test tones employed

<u>Tone</u>	<u>Frequency</u>	<u>Logarithmic Reduction Factor</u>	<u>Sensation Units</u>
C <sub>2</sub>	128	3.17	31.7
E <sub>2</sub>	144	2.93	29.3
F <sub>2</sub> <sup>#</sup>	180	3.11	31.1
A <sub>2</sub> <sup>#</sup>	205	3.56	35.6
C <sub>3</sub>	256	4.00	40.0
E <sub>3</sub>	288	4.25	42.5
G <sub>3</sub>	384	4.28	42.8
A <sub>3</sub> <sup>#</sup>	456	4.72	47.2
C <sub>4</sub>	512	5.27	52.7
D <sub>4</sub> <sup>#</sup>	610	5.12	51.2
F <sub>4</sub> <sup>#</sup>	723	5.27	52.7
A <sub>4</sub> <sup>#</sup>	912	5.22	52.2
C <sub>5</sub>	1024	5.60	56.0
F <sub>5</sub> <sup>#</sup>	1448	5.17	51.7
C <sub>6</sub>	2048	5.37	53.7
F <sub>6</sub> <sup>#</sup>	2896	4.43	44.3
C <sub>7</sub>	4096	6.20	62.0

The average reduction over the entire range of tones is 45.7 units. The weight of the finished construction was 56 pounds per square foot.

RIVERBANK LABORATORIES



## TESTIMONIALS

The accompanying testimonials are representative of what all  
users of POTTSCO think about it

J. E. SMITH COMPANY  
BUILDERS  
1206 SHERMAN AVENUE  
CINCINNATI  
Telephone, WE 6613

June 1,  
1933.

H. B. Potts Corporation  
1 North La Salle St.  
Chicago, Ill.

Dear Mr. Potts:

When we formally closed the contract with you for furnishing "Pottscos" for the New Cincinnati Post Office, you stated that in allowing 1800 lbs of Pottscos to the cubic yard, that this 1800 lbs. would yield from ten to fifteen percent more than an actual cubic yard of material.

At the time, we were rather skeptical of your statement, and since we have completed our job, using approximately 2200 yds. of your material, we find that the yield is actually 15% greater.

We had a little difficulty at the start by using too much water and suggest that you caution your future purchasers of Pottscos to be careful about this water content. We like your material very well, handles very nicely and we have floors that have passed a very rigid Government inspection.

Very truly yours,

J. E. SMITH COMPANY  
*J. Edward Smith*

JES:PS



**BUCK CONSTRUCTION COMPANY**  
INCORPORATED

MILWAUKEE, WISCONSIN  
Sept. 13, 1930.

The Marble Cement & Coal Company,  
Muskegon,  
Michigan.

Gentlemen:

In response to your inquiry concerning our opinion of Pottscos Units which we are employing for masonry on the Glendale School job, Vanderweest & Child, Architects, we are pleased to inform you that this material has performed in a manner that meets all of our expectations.

Our experience shows that Pottscos Units, because of their smooth texture and uniform size permit the laying of straight, even walls rapidly and economically. We consider the Pottscos Unit at least equal to any other similar material which we have employed on other projects.

Yours very truly,

BUCK CONSTRUCTION COMPANY,  
By *Dean Egan*  
President

INCORPORATED IN THE STATE OF ILLINOIS

**GEORGE LATHER CONSTRUCTION CO., Inc.**  
GENERAL CONTRACTORS

MILWAUKEE, WISCH.

Sept. 11, 1930

The Marble Cement & Coal Co.,  
Muskegon, Michigan

Gentlemen:

Answering your inquiry, we are glad to state that the use of Pottscos Units as manufactured by you and used for masonry for exterior face brick walls and interior load bearing division walls for the three story High School, Frank S. Foster, Architect, measured up to the performance we expected from it.

We consider Pottscos Unit walls to represent dependable and sound masonry construction, and find it a most economical type to erect. From a contractor's viewpoint, we find that the size, texture and uniform dimensions of Pottscos Units result in direct economy, and we are particularly impressed with the economical and convenience characteristics offered by the masonry qualities of this material.

Yours very truly,

GEORGE LATHER CONSTRUCTION CO.  
By *Roy Lather*

RAL-d

### ECONOMY OF STRUCTURAL LIGHT-WEIGHT CONCRETE

The following quotation is an extract from report of Committee 406, American Concrete Institute, Frank A. Randall, outstanding structural engineer, Author-Chairman:

"The additional price that profitably may be spent for a lighter weight concrete in order to reduce the cost of structural frame. For example, it would be worth while to pay 10 cents more per cu. ft. (2.70 a cubic yard) to secure a reduction from 150-lb. concrete to 130-lb. concrete in a concrete frame building thirty stories high and a reduction to 115-lb. or 100-lb. concrete in a five story building, depending on whether the floor was of solid slab or joist construction. The savings are more favorable in the steel frame building.

We are hopeful that the data developed will prove of value."



PRINTED AT THE  
CHICAGO OFFICE

E. A. RANDALL  
STRUCTURAL ENGINEER  
1300 W. JACKSON ROAD  
CHICAGO

October 10, 1933

THE POTTSCCO CORPORATION,  
1 North LaSalle Street,  
Chicago, Illinois.

Attention: Mr. E. A. Randall

Dear Mr. Randall:

In reply to your inquiry, I am pleased to give you my opinion of the possible market of light weight concrete aggregates generally and your material POTTSCCO particularly.

My experience in the light weight aggregate field from an engineer's standpoint has convinced me of the economic advantages gained by their use.

I have recently been engaged in the design of several buildings - one of skyscraper type - using light weight aggregates. These designs were made after a complete study of various aggregates and the advantages of light weights definitely proven. These advantages have been proven conclusively and now are generally accepted by architects and engineers.

POTTSCCO, in my opinion, has a wide and diversified market. This market or field may be logically divided into four divisions, each based upon its use or purpose.

The first and largest of these divisions is light weight floor and roof fill. An immediate demand of large proportions is brought about by the present \$3,500,000,000 Government building program, which will involve many thousands of cubic yards. POTTSCCO satisfies the Government specifications for floor fill in post offices, court houses and other buildings of similar nature.

The second division embodies the precast building blocks and partition unit industry. This industry has been established for many years and uses large quantities of concrete materials. POTTSCCO, because of its light weight, quality and low cost should qualify for a large percentage of this business.

The third division includes the precast concrete roof slab industry. A conservative estimate of the average quantity of aggregates used in this industry annually for the past ten years is 200,000 cubic yards. This quantity is calculated from data given in reports on construction by the Department of Commerce, Washington, D. C. and includes only those states

into which POTTSCCO can be shipped with a price advantage over competitive materials.

The fourth division, although not the greatest, should become much greater as precast advantages become still more generally known among architects and engineers. This division covers the manufacturing of light weight precast units for fireproofing structural steel in the skyscraper type of buildings. No accurate data is available which may be used in calculating possible quantities in this division.

Yours very truly,  
*E. A. Randall*  
E. A. RANDALL

EAR:3

# What Light-Weight Concrete Means in Dollars and Tonnage

**Saving in Steel Alone Ranges from 10 to 20 Per Cent—Some Facts Established from Actual Experience—Adding Stories to Existing Buildings**

FOR many years the desire for lighter dead weight in superstructures of buildings and one of light-weight building units in particular, is playing an ever increasing part in the development of concrete structure.

## Light-Weight Manufactured Aggregate

With the advent of manufactured aggregate capable of producing light weight concrete of high structural strength and suitable for all purposes, the possibilities for saving in weight of structural concrete weighing around 100 lb per cu ft, and still capable of extending the light weight into the great mass of concrete in structural members.

## Great Saving in Steel Tonnage

Designers know that this substantial reduction in the weight of structural concrete will be accompanied by an appreciable reduction in steel tonnage whether used in reinforcing the structural steel or in buildings that are reinforced with concrete.

## What the Actual Figures Tell

In an article by E. H. White, in the June 1933 issue of *Concrete*, reference is made to the saving resulting from the use of light weight concrete weighing 100 lb per cu ft instead of concrete weighing 140 lb per cu ft. In the design and construction of the Victor Building, New York City, a building 12 stories in height, 12 stories, there was a saving of 100,000 lb of steel in the reinforcement of the concrete.

- (1) The amount of steel reinforcement was reduced from 1,200 to 1,000 tons.
- (2) The amount of reinforcing steel was reduced from 1,200 to 1,000 tons.
- (3) The amount of concrete was reduced from 1,200 to 1,000 tons.

## Big Saving on Tall Building

Another case is that of a 45-story building constructed in Chicago in 1929. The building, which has a structural steel frame, was designed with concrete and floors of reinforced concrete. To obtain a structural steel frame, a well known firm of plain, one-based on the use of ordinary steel in plain concrete weighing 100 lb per cu ft, and the other based on using both fine and coarse aggregate, producing concrete weighing 100 lb per cu ft. From the comparative designs the following facts were obtained:

- (1) The structural steel tonnage was reduced from 7,500 to 6,000 tons.
- (2) The amount of reinforcing steel was reduced from 1,200 to 1,000 tons.
- (3) The amount of concrete was reduced from 1,200 to 1,000 tons.

## Randall Committee Investigation

One of the most extensive investigations thus far made on the economic value of light-weight concrete, was the investigation conducted by the American Concrete Institute, under the chairmanship of Frank A. Randall, in 1931. The committee was organized in March 1931, and its report was published in the March 1932 issue of the *Journal of the American Concrete Institute*.

## Concrete Established by Randall Committee

The committee was organized to make a study of the economic value of light-weight concrete. The committee was organized in March 1931, and its report was published in the March 1932 issue of the *Journal of the American Concrete Institute*.

## More Stories Added

Another interesting illustration is that of the Chicago City Hall, which was designed by the architect, Daniel Burnham. The building was designed with concrete and floors of reinforced concrete. To obtain a structural steel frame, a well known firm of plain, one-based on the use of ordinary steel in plain concrete weighing 100 lb per cu ft, and the other based on using both fine and coarse aggregate, producing concrete weighing 100 lb per cu ft. From the comparative designs the following facts were obtained:

## CONCRETE

January, 1933

## Ford Road School and Show at Lafayette in January

The Ford Road School and Show at Lafayette in January. The school was designed with concrete and floors of reinforced concrete. To obtain a structural steel frame, a well known firm of plain, one-based on the use of ordinary steel in plain concrete weighing 100 lb per cu ft, and the other based on using both fine and coarse aggregate, producing concrete weighing 100 lb per cu ft. From the comparative designs the following facts were obtained:



A Publication **Concrete** Devoted to  
CONCRETE CONSTRUCTION  
AND CEMENT MANUFACTURE

401 WEST MADISON STREET  
CHICAGO, ILLINOIS  
October 9 1933

The Putnam Corporation  
One North La Salle Street  
Chicago, Illinois

Sir:

Permit me to bring to your attention three articles appearing in recent issues of CONCRETE, all of which should be of interest to you as a producer of light-weight concrete aggregate. In the October issue, the article beginning on page 5 will interest you. The September issue contains two articles with which you are even more directly concerned. One of these includes the new A.S.T.M. specification for light-weight aggregate, while the other, entitled "Blast-Furnace Slag Accepted as Concrete Aggregate," mentions numerous national societies who have accepted this aggregate after full investigation.

Based on the writer's study of the cement industry, the concrete construction field, and the building industry, in my editorial capacity, I am profoundly convinced that there is an expanding and most important market for light-weight concrete. I have held this belief for six or eight years and have seen it confirmed by developments which have already taken place and are now taking place.

Architects and engineers are becoming more readily conscious every year of the advantages of dead-load savings in the structures they design. I predict that the day is not far distant when practically all our steel frame buildings of any considerable height will be fireproofed with light-weight concrete. This is based on findings of the American Concrete Institute and also on the economic law of efficiency and saving.

In addition to the articles mentioned above, I have published in our magazine numerous articles on light-weight concrete and its uses, and also on the use of light-weight aggregates similar to yours. In reading these concrete, my studies have convinced me that there could scarcely be an aggregate more naturally suited to the making of light-weight concrete than granulated slag.

There is absolutely nothing in your aggregate, according to its chemical analysis, which would injure or corrode steel or other building

The Putnam Corporation

October 9, 1933

material, and its chemical affinity for portland cement is noticeable. In fact, if PUTNAM were ground to the fineness of cement and kept perfectly dry, it should, when mixed with water, have cementing value quite analogous to that of portland cement itself.

Light-weight concretes are useful for many different kinds of present and future products, such as back-up blocks, partition walls, floor and roof slabs, as well as floor fill, roof fill, railing concrete, etc., and there is also, I believe, a considerable field for your product in bascule bridges, in the manufacturing of barrel vaults, laundry trays, garbage containers, lamp furniture, ornamental slabs and many other uses yet to be developed. The mechanical properties of aggregate such as yours are of noticeable excellence, and the manufacturing values are particularly high. I predict for your product a constantly expanding market, particularly as I understand that your low cost of production and your low commodity freight rates enable you to compete on more than equal terms with other light-weight aggregates.

Yours very truly,

Freeman M. Stinebaugh  
Freeman M. Stinebaugh Miller  
C O S C S S T E

MS  
1

## ADVANTAGES OF LIGHT-WEIGHT AGGREGATE

The following reproduction is the result of an exhaustive investigation made by Mr. H. Herbert Hughes of Washington, D. C. regarding light-weight aggregates, which analysis speaks for itself insofar as POTTSCO light-weight aggregate is concerned.

THE AMERICAN INSTITUTE OF MINING AND METALLURGICAL  
ENGINEERS

### Technical Publication No. 405 *Class H, Nonmetallic Minerals, No. 17*

#### Scope of the Light-weight Aggregates Industry

By H. HERBERT HUGHES  
WASHINGTON, D. C.

DISCUSSION OF THIS PAPER IS INVITED. It should preferably be presented in person at the New York Meeting, February, 1931, when an abstract of the paper will be presented. If this is impossible, discussion in writing may be sent to the Editor, American Institute of Mining and Metallurgical Engineers, 29 West 39th Street, New York, N. Y., for presentation by the Secretary or other representative of the author. Unless special arrangement is made, the discussion of this paper will close April 1, 1931. Any discussion offered thereafter should preferably be in the form of a new paper.

29 WEST 39th STREET  
NEW YORK, N. Y.

All papers issued by the Institute are abstracted month by month in Mining and Metallurgy. This paper is issued with the February, 1931, number. Members are urged to go through the abstracts each month and select and request such papers as they can use.

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#### *PottSCO*

Water-cooled granulated slag has attracted attention as light-weight aggregate for several years, particularly for use in masonry building units. No extensive utilization of the material has ever been made, however, because of its soft friable nature and its low crushing strength. The H. H. Potts Co. has overcome these objectionable features by special cooling process. The product, PottSCO, was first marketed in the Chicago district in August, 1928.

The PottSCO manufacturing process is completed within the steel mill, using slag from selected furnaces. Patents covering its manufacture are pending and no details regarding the process are yet available. Regulated temperature of the water during cooling appears to be the important feature.

PottSCO aggregate weighs about 1500 to 1600 lb. per cubic yard, a liberal moisture allowance bringing the shipping weight to 1800 lb. One commercial grade is produced, the size of the particles ranging approximately from 4 per cent. retained on 8 mesh to 98 per cent. retained on 100 mesh, giving a fineness modulus of 2.85. At present PottSCO is being used almost entirely for precast masonry units. Tests have been made, however, covering its use in poured concrete, particularly for floor sill and roofing, but the company has not actively promoted its sale for these purposes.

PottSCO masonry is recommended for all types of construction requiring back-up or partition units, its insulating properties being especially stressed. The aggregate has been available only since 1928, but its reception in the building trade shows that it occupies an important position in the light-weight field.

The plant supplying PottSCO to the Chicago district is at Indian Harbor, Ind., and from there the material is shipped to the concrete products plants that manufacture PottSCO units. Most of these plants lie within a 300-mile radius of Chicago. The maximum capacity of the Indian Harbor plant is 750 tons per day. A second plant for production of PottSCO was opened in Pittsburgh, Pa., in September, 1930. Its maximum output is 1000 tons daily, but distribution in this area is still in its infancy. Fig. 1 shows the location of these two plants as well as districts of appreciable consumption of PottSCO. Each one of these districts, with a few exceptions, also represents the location of a plant manufacturing PottSCO units.

PottSCO production has increased steadily since 1928 and it is reasonable to assume that the increase will continue. Ultimate PottSCO production, however, will be confined to those areas where suitable slag is available. Buffalo, Youngstown, Cleveland, and especially Birmingham, are logical locations for future plants although the slag produced in the minor iron and steel manufacturing districts also may be utilized. Expansion of PottSCO production, particularly for building units, will not only increase the field of light-weight aggregates but also will aid the iron and steel industry in profitable utilization of by-product slag.



# COMPARATIVE COST OF POTTSKO BUILDING UNITS IN THE WALL WITH HOLLOW TILE IN THE WALL

16

Concrete Products

October, 1930

## What Is a Fair Market Price for Light-Weight Units?

A Careful Analysis of All Factors Affecting the Sales Figure

By H. H. POTTS

In a consideration of light-weight concrete units, two topics for thought come immediately to mind: the potential market, and the price at which the products can be sold. The potential market for light-weight concrete units comprises every masonry structure where clay tile, common brick or any other are ordinarily used.

The fair market price for such units should be expected to be true cost plus a reasonable profit, but more logically, a fair price for a concrete unit is the actual value it delivers when compared with competitive construction materials.

Practically all load-bearing and non-load-bearing exterior walls employ common brick, clay tile or concrete units for backup material. The cost of a wall built of solid brick is about twice the cost of the same type of wall built of hollow clay tile or light-weight concrete units, with the result that solid brick construction is limited to relatively few buildings. In fact, solid brick masonry walls when used today over their specification to the particular job where cost is not a major objective, where the structure contains many window openings and thus requires but a small volume of masonry, or where preterential building code restrictions exist in a particular locality.

Ordinary clay tile for backup has enjoyed the advantage of being the first material on the market to demonstrate the marked economy that can be effected by substituting a larger, hollow unit for the smaller solid brick unit. The trend of the past twenty years has been toward the almost universal use of hollow clay units for backup. Since the advent of light-weight concrete units about ten years ago, concrete units have shared in this trend and today they occupy an important place in the backup unit field. Because clay tile led the building industry toward the use of hollow units for backup, that material still holds the major volume position in that class of wall construction.

Light-weight concrete units, as typified by those manufactured of Pottery, Hydrate and cluder aggregates, are making marked progress in the backup unit field. This progress is evidenced by the increasing number of architects who specify light-weight concrete units and clay tile units on the same basis, giving the contractor his option to purchase either one, and by an increasing number of

specifications calling for alternate proposals for concrete or clay tile units where one or the other is specified in the base bid.

The result is that clay tile and light-weight concrete units are in direct competition on jobs comprising the major market volume of construction. It is therefore necessary that the cost of light-weight concrete unit walls be in line with the cost of clay tile walls.

Informed men in the industry know, and know why, a masonry wall built of light-weight concrete units is a better wall than one built of clay tile. In some cases owners and their architects appreciate the superior qualities of this type of concrete masonry construction and will pay more to obtain it; nevertheless, if concrete is to occupy a commanding position in the masonry backup field, it is essential that it be sold on a price basis that will compete with the cost of clay tile walls.

The next step to consider is, what are comparative costs of similar walls built of clay tile units, and of light-weight concrete units?

Costs for the several materials that enter a masonry wall will vary according to mar-

ket location. Masonry labor cost and efficiency will also vary; however, the figures given below represent average conditions and are sufficiently accurate for comparative purposes. (All figures are based on walls 8 in. thick.)

### Price Is Not the Only Consideration

This table shows equivalent wall volume values for hollow clay tile and light-weight concrete masonry walls, 8-in. thick. For example, if 8x12-in. clay tile are delivered to building site at a price of \$60 per M, the 8x16-in. light-weight concrete units are worth \$170 per M, delivered.

On an even wall cost basis the use of any light-weight concrete unit offers many advantages to the owner, his architect and the contractor. The owner obtains a building, the walls of which have superior heat and sound insulating properties and substantially better fire resistance characteristics. The contractor effects marked economy because of the nailing, cutting and plaster economies made possible with these units. Another important consideration is that owner, architect and contractor contribute to the support and development of local industry and they

COST OF LABOR AND MORTAR PER THOUSAND	
Mason labor, 8x16-in. concrete units, per M.	\$70.00
Mason labor, 8x12-in. clay tile, per M.	50.00
Mortar, concrete units (3 cu. ft. per 100 sq. ft.) per M.	5.00
Mortar, clay tile (6 cu. ft. per 100 sq. ft.) per M.	9.50
Number of 8x16-in. units required per sq. ft. of wall.	11
Number of 8x12-in. units required per sq. ft. of wall.	22

COST OF LABOR AND MORTAR PER SQ. FT.—8 IN. WALL	
Concrete tile	Clay tile
Labor, 11 concrete units @ 7 cts.	77 cts.
Labor, 22 clay units @ 5 cts.	110 cts.
Mortar, 11 units @ .005.	1.65 cts.
Mortar, 22 units @ .005.	2.1 cts.
Total labor and mortar cost per sq. ft.	87.5 cts.
Saving in favor of concrete units, 4.35 cts. per sq. ft.	13.10 cts.

COMPARATIVE COST OF 8-IN. CONCRETE UNIT AND CLAY TILE WALLS	
Clay Tile	Concrete Unit
Selling price hollow clay tile (8x12) 11 units per sq. ft.	Selling price concrete units (8x16) 11 units per sq. ft.
\$55.00	\$110.00
60.00	120.00
65.00	130.00
70.00	140.00
75.00	150.00
80.00	160.00
85.00	170.00

In addition to actual lower wall costs, the added qualities of POTTSKO walls in the form of insulation, acoustics, nailing, direct plaster base, etc. are decidedly apparent.

Data on these features appear elsewhere in this booklet.

Light-weight units used for backup and partitions in St. Paul's church, Shakerag, Wis. P. A. Sankowicz, architect, Shakerag; F. C. Barwell, general contractor, St. Cloud, Wis. Units made by Economy Concrete Products Co., Milwaukee

have direct contact with the owners of the producing plant. The sure total for these advantages offers an incentive for all parties interested in design, construction and ownership to make a prompt decision in favor of concrete masonry, provided the cost of concrete masonry is no higher than for clay tile. The result is low selling cost. In the event that concrete masonry costs more than clay tile the owner, the same advantages must be stressed to justify the added cost, with the result that selling costs are greatly increased.

Throughout the central states, delivered prices for 8x12-in. clay tile (this size is most common for backup) range between \$60 and \$70 per thousand. Reference to the comparative table shows that the equivalent in concrete units is a price range between \$160 and \$180 per thousand.

Assuming an average delivered price of \$65 per thousand for clay tile, a fair price for 8x16-in. light-weight concrete units is \$170 per thousand or 17 cts. each, delivered to the building site.

Establishing a delivered unit price of 17 cts. for an 8x16-in. light-weight concrete unit as a level that meets average clay tile competition immediately presents another most important question, i. e., Can a concrete products manufacturer produce 8-in. units to sell at 17 cts. and make a profit? It is also necessary to inquire whether costs of manufacture will provide any leeway in the event clay tile prices are lower than 85 cts.

Like all other manufactured commodities, the cost of producing and marketing concrete units is subdivided into costs of raw ma-

terials, labor, selling distribution and overhead. Because of certain definite characteristics true of the concrete products industry, a considerable proportion of production cost is governed by the cost of raw materials and regardless of volume produced, within reasonable limits, costs per unit are substantially the same. Volume has a marked effect, however, on indirect costs and has an important bearing on profit.

One outstanding feature that should be forewarned in the minds of concrete products manufacturers is the encouraging fact that the production of light-weight units is in addition to the normal volume of ordinary units. The same plant and equipment are used for both, effecting overhead cost savings that amount to as much as 20%. For example, assume a plant with an annual production of 250,000 8-in. heavy concrete units, through the sale of light-weight units, an additional volume of 250,000 units is obtained. Total volume then becomes 500,000 units without any increase in fixed charges, such as taxes, depreciation, insurance, office salaries, etc. Fixed charges are automatically cut in two.

Other economies are realized because the added volume permits of better plant organization, reducing labor costs and adding to profits.

As previously stated, the cost of raw materials, cement and aggregate, represents a substantial proportion of total production cost. In as much as the cost of cement is relatively constant in a given market, the cost of aggregate assumes major importance. Because of the relatively high percentage of total cost represented by cement and aggregate, we will first consider the other items

An attempt was made in the accompanying article to set up on the basis of 1930 prices, a ready and quick comparison of the cost of POTTSKO walls with hollow tile walls.

The theory of the calculations is adjustable to the basis of prevailing prices governing both products.

Because of the design and size of POTTSKO building units displacing smaller units of other products, the ECONOMY of POTTSKO walls is reflected in labor and mortar especially.

of cost in an effort to determine the maximum permissible cost that can be allowed for cement and aggregate. We will reverse the ordinary procedure of estimating manufacturing costs by giving first consideration to the most important element—profit.

We will assume that a net profit of 2 cts. per 8x16-in. unit or equivalent is equitable from the standpoint of increased capital and consistent with the nature of the commodity and prevailing competitive conditions. Other estimates of costs listed are based upon the experience of the writer gained from plant operation and through contact with widely distributed plant operators. It is expected that individual plant operators interested in this subject will substitute figures for each item that will reflect costs based upon their particular set of conditions, arriving at a result that will accomplish the objective of this article, i. e., "Can you make a profit manufacturing light-weight units?"

### FACTORS INVOLVED IN ESTABLISHING THE SELLING PRICE OF LIGHT-WEIGHT CONCRETE UNITS

	Allowance per 8x16-in. unit
Profit	2 cts.
Discount, 3% of 17 cts.	.85
Delivery expense	.125
General overhead expense	.1 cts.
Sales expense	.1 cts.
Operating labor expense	.175
General plant expense, power, repairs, etc.	.1
Total, not including cement and aggregate	9.35 cts.
Allowance for cement and aggregate	7.65
Selling price per 8x16-in. unit	17 cts.

According to this basis of estimated costs, it is probable to sell 8x16-in. units on the basis of 17 cts. per unit, delivered, less 3% cash discount—provided combined cement and aggregate cost does not exceed 7.65 cts. per unit. Cement cost will generally vary between 2 and 3.25 cts., leaving a balance for aggregate cost ranging from 4.4 to 5.65 cts. per 8 in. unit.

Certain characteristics, other than cost, of the three light-weight aggregate masonry markets have an influence on the cost of manufacturing and on the characteristics of the resulting concrete unit. The particular advantages claimed for each aggregate must rest with their respective sponsors and it is for the individual manufacturer to select the one that is available and best suited to his own viewpoint. Progressive manufacturers are successfully employing each aggregate to the advancement of the industry.

An aspect of appeal is directed to all progressive concrete products manufacturers to encourage each to manufacture some type of light-weight concrete unit adapted to above-grade construction. The future of the industry rests upon the aggressive pursuit of such a course.



# ADVERTISING

THE POTTSCO CORPORATION attempts to assist manufacturers, dealers, and others in building and maintaining the prestige of POTTSCO at all times, by an advertising campaign through representative and proper mediums.

Below is reproduced specimens of advertisements taken at random which have appeared from time to time.

## POTTSCO LIGHT WEIGHT AGGREGATE

Architects and Engineers are specifying a proven product in POTTSCO because it has given complete satisfaction in many important buildings including several of the largest Post Offices in the United States. POTTSCO combines light weight with compressive strength and load bearing value.

Contractors like POTTSCO because of its easy-workability, greater yield labor saving, low first cost and uniform results at all temperatures.

Has many uses: Floorfill, Roof Slabs, Nailing Concrete, Fireproofing, Back-up Tile, Partition Tile, Roofing Tile, Cast Stone.

POTTSCO fulfills every requirement as shown by laboratory tests and actual field work—

- High Insulating Value
- Great Compressive Strength
- Tested Acoustical Value
- Smooth Workability
- Uniformity at all Temperatures
- No Segregation in Mixing

Shipments from either Chicago or Pittsburgh at low freight rates, in quantities from a carload up. Any desired shipping schedules can be met.

Send today for sample and test data from leading laboratories. Block plant manufacturers, write for details of franchise offer.

### THE POTTSCO CORPORATION

One North La Salle Street

Chicago, Illinois

## POTTSCO IS CHEMICALLY INERT

POTTSCO contains no soluble sulphur and less sulphuric anhydride than Portland cement itself. In fact, a chemical analysis of POTTSCO parallels a similar analysis of Portland cement.

A report of test on POTTSCO by the R. W. Hunt Company proves that it contains no ingredients which can in any way injure steel or other building materials. A paragraph in the Hunt report reads as follows:

"The low percentage of water soluble, as well as the natural reaction indicates that the samples submitted would not cause corrosion when used as an aggregate for concrete in contact with reinforcing steel."

The report states further: "A piece of polished steel showed no noticeable deterioration on being placed in boiling water containing portions of pulverized POTTSCO."

### Parallels Portland Cement

A LEADING BRAND OF PORTLAND CEMENT	POTTSCO	Per cent
Alumina	1.15	11.00
Iron Oxide	0.15	0.15
Calcium Hydroxide	0.15	0.15
Carbon Dioxide	0.15	0.15
Water	0.15	0.15
Loss on ignition	0.15	0.15



### USES

POTTSCO is being used for monolithic light weight concrete on some of the largest and most important buildings for the U. S. Government.

Equally good for moulded units—block or tile.

Light in Weight

Cellular Yet Hard and Crystalline

High in Compressive Strength

Send for new folder just off the press, bearing the title—"Want to Save Money?"

The POTTSCO Corporation  
1 North La Salle St. Chicago

## POTTSCO

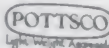
### A Proven Product at a New Low Cost

Architects, engineers and contractors are specifying and using POTTSCO today because it is a tested product and has given complete satisfaction on numerous important buildings, including some of the largest post offices in the United States.

Every quality you want in a lightweight aggregate is found in POTTSCO.

- Strength
- Workability
- Insulation
- Non-absorbent

It has tested insulation and acoustical value, uniformity at all temperatures and no segregation in mixing.



### USES

- Floorfill
- Roof Slabs
- Nailing Concrete
- Fireproofing
- Back-up Block
- Partition Tile
- etc.

POTTSCO fulfills every requirement as shown by laboratory tests and actual field work.

Write for descriptive literature, data and delivered prices.

The POTTSCO Corporation  
1 North La Salle Street  
CHICAGO

## POTTSCO

### Shows High Efficiency AT LOW COST

POTTSCO is

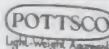
- High Compressive Strength
- Exceptional Insulating Value
- Acoustical Value
- Low Cost

A standard POTTSCO block shows a heat loss of only 30 B T U per degree temperature difference per inch.

The Riverbank Laboratory gives POTTSCO a high acoustical rating.

In addition to its low first cost, POTTSCO shows a substantial labor saving due to its easy workability.

POTTSCO is equally good for monolithic work—roof slabs, nailing concrete, back and fill—for present masonry units—back-up block and partition tile. It conforms with state and local building codes.



POTTSCO was used throughout for light weight concrete floor slabs on the large new Post Office building at Cincinnati.



New Post Office Building at Cincinnati

Builder—Consolidated Engineering Company  
Concrete Contractor—J. E. Smith Company

Write for descriptive literature, data and delivered prices.

The Pottisco Corporation  
1 North La Salle Street  
Chicago

## POTTSCO

Used in the New

Chicago Post Office  
for floor fill



Graham, Anderson, Probst & White, Architects  
John Griffith & Son Co., General Contractors

POTTSCO used in the largest post office in the country! POTTSCO has exceptional light-weight, compressive strength, great insulating and acoustical value. High in insulation and low in cost! Good for back-up block and partition tile as well as for monolithic work.



- Floorfill
- Roof Slabs
- Nailing Concrete
- Fireproofing
- Load-bearing Building Units
- Partition Tile
- Roofing Tile

Shipments from either Chicago or Pittsburgh at low freight rates in quantities from carload up.

Write today for sample and engineering data. Extensive territory available to block plant manufacturers.

The Pottisco Corporation  
One North La Salle Street Chicago



# Your Neighborhood Concern

Owner Management, Personal Contact, Prompt Courteous Service—Low Overhead

— SOUTH SIDE AND SOUTHWEST SIDE

## BUILDING BLOCK PUT ON MARKET UNUSUAL PRODUCT

All Qualities of Wood Obtained in Substantial Substance.

A Building block, made by a special process to remove approximately 50 per cent of its weight but having sufficient hardness to produce adequate compression strength and comparatively low absorption qualities, is being made and has been placed on the market by the Kalamazoo Cement Products Company located on Alcott and Portage streets. The new product is known as Pottscoc.

In special tests the blocks have been found suitable for nailing, sawing, and boring. Its tenacity quality for retaining nails have proved by tests to be superior to that of wood. In this test 80 nails were driven into a 2x4 pine timber and required an average pull of 140 pounds for extraction, whereas the same number of nails driven into the Pottscoc blocks required an average pull of 145 pounds, according to Lester R. Ryan, manager of the company.

Mr. Ryan also says that these block units may be easily and quickly sawed on any angle with

any type of saw with no disastrous results to the saw; and that holes may be bored with ordinary tools and even lag screws applied with no ill effect to the brick.

The fire resisting qualities of the product is high, as has been determined by the Robert W. Hunt, Engineers, whose reports, after a test made, states that "the area in immediate contact with the flame came to a bright cherry red which is generally considered indicative of a temperature of about 1,500 degrees Fahrenheit. The other face of the block was then not too hot to be touched by the hand. While under these conditions the blocks were deluged with cold water. No cracking or scaling off of the blocks was apparent from the heat or from the cooling of the water."

The sound-deadening qualities of the product, determined by a test made by the Riverbank Laboratories of Geneva, Illinois, reveals an average reduction over the entire range of tones of 45.7 units, while a reduction of only 80 sensation units would be necessary to reduce a sound of ordinary conversational loudness to inaudibility.

In a freezing and thawing tests made by the University of Wisconsin from January, 1929 to March 26, 1929 showed that though there was some surface deterioration to a depth of only 1-16 of an inch or less, this did not show up until about 90 reversals had been made.

Other tests made reveal the average compression strength of the units to approximate between 900 and 1,200 pounds per square inch.

Though the product is new to Kalamazoo it has been manufactured by plants in Wisconsin for some time. Slag is used in its manufacture and a chemical analysis shows the block to contain lime, silica, alumina, manganese, and sulphur.

All lead compounds are poisonous.

### BILLINGS-CHAPIN

4-Hour Enamels

4-Hour Varnishes

Sand Pails and Shovels 1¢

Scooters, \$1.49 up

## BAIT MAN UNABLE TO MEET DEMANDS FOR HIS PRODUCT

DeBruin's Business Six Years Old; Has Special Game Fish Permit.

So great has been the demand for live bait by fishermen this spring that Jake DeBruin, bait dealer at 1501 South Westnedge street, is finding it difficult to keep

with the demand in spite of the fact that he leases two ponds for live bait and covers a radius of 40 miles for bait. He is at present considering getting gold fish to keep up with this demand.

Mr. DeBruin has one of the modern live bait establishments in Michigan. On his property Westnedge street he has constructed a roofed-in minnow tank the base of which is below the water level of Axtell creek runs through the property. The creek furnishes a constant flow of water through the tanks.

### ALL SIZES

The minnows are of all types and run from 1/2 inch down in size. Mr. DeBruin has leased two ponds in the County to keep up with the demand for his product. He is forced to sell his bait at a low price to get it out of the ponds.

Mr. DeBruin has been in the bait business for six years. He has a special permit from the State to sell live bait. He is a member of the Kalamazoo Fish and Game Club.

nets as each net pulls to three hundred minnows.

**BARS ST. JOE**

Further evidence of the man's manship is the sign placed in his minnow tanks: "Notice: No to Residents of St. Joe. This county does not allow minnows to be sold with minnows. DeBruin recognizes that county, in well acquainted with them bait."

All types of crickets, and though pat sively used by fishermen Mr. DeBruin's evidence lures u the n large

pr

From

The Kalamazoo Gazette  
Monday, July 8, 1929.

### L. A. Schoolmaster

Sanitary Plumbing and Heating  
Experienced Workmen  
1108 S. Westnedge Ave.  
Dial 7831

### R. P. WARNER & SON

Agents for Century Electric Motors, 1-30 h.p. to 250 h.p.  
1925 Portage St



HADLEY F. FREEMAN  
DONALD H. SWEET  
GEORGE M. ALBRECHT  
HARRY S. WEIDMAN  
—  
MARO L. JAHR  
MARSHALL LOW

**FREEMAN AND SWEET**  
PATENT ATTORNEYS  
TEN SOUTH LA SALLE STREET  
STATE 6070  
CHICAGO, ILLINOIS

RESIDENT—  
DONALD H. SWEET  
MARO L. JAHR  
—  
CLEVELAND—  
FREEMAN AND WEIDMAN  
—  
MILWAUKEE—  
FREEMAN AND ALBRECHT

August 7, 1931.

Harry H. Potts, Esquire,  
201 North Wells Street,  
Chicago, Illinois.

Dear Mr. Potts:

It is a pleasure to notify you of the formal sealing and issuing of United States Patent 1,816,988 on August 4, 1931, based on your development of light-weight concrete employing a granulated slag aggregate.

At the outset, when we first approached the Patent Office, we took the position that you were the originator of the first practical light-weight concrete made from any granulated slag aggregate. It is a pleasure now to look back and see that all the evidence considered throughout the proceedings, sustained our position and that the Patent Office has now agreed with us in that conclusion.

Thus it would appear that you can look forward to seventeen years of monopoly and protection with respect to light-weight concrete using an aggregate wholly or chiefly made up of a suitable form of granulated slag, based on a patent that should be as comprehensive and effective as the courts have held the Straub patent to be with respect to cinder block.

Yours very truly,

DHS:PH

*Donald H. Sweet*





Muskegon, Mich.  
Residence of H. Berghins  
POTTSCO back-up and partition units



POTTSCO back up units  
used in  
Nims School,  
Muskegon Heights, Mich.



Chicago, Illinois  
New U. S. Post Office  
POTTSCO floor-fill used throughout



Milwaukee, Wis.  
Apartment building using POTTSCO  
back-up and partition units—



Milwaukee, Wis.  
Foundry - POTTSCO light-weight brick used  
for all walls.





Sheboygan, Wis.  
POTTSO back-up units in this church



Davenport, Iowa  
Apply Portland Cement  
Stucco to POTTSO back-up  
units - residence J. H. Kottman



POTTSO back-up units  
used in  
North Muskegon, Mich. School.



Milwaukee, Wis.  
Particulate type of residence  
using POTTSO back-up and  
partition units—



Milwaukee, Wis.  
Residence using POTTSO back-up  
and partition units





Wheaton, Illinois  
Colored Plastic Paint applied  
direct to POTTSCO walls.



Burlington, Wis.  
Catholic Monastery  
POTTSCO back-up and partition units.



Duplex Residence of B. H. Schoonhoven  
ready for application Portland  
Cement Stucco direct on POTTSCO  
back-up units--



Milwaukee, Wis.  
Residence of L. E. Schwalbe  
using POTTSCO back-up and partition units



Muskegon, Michigan  
Nurse's Home - POTTSCO



Cincinnati, Ohio  
Placing PORTSCO floor-fill  
in new U. S. Post Office



PORTSCO back up units  
used in  
Michigan County School  
North Muskegon, Mich.



Cincinnati, Ohio  
New U. S. Post Office -  
PORTSCO floor fill used throughout



Milwaukee, Wisconsin  
A typical apartment building  
in which PORTSCO back-up and  
partition units are used—



Milwaukee, Wis.  
Commercial and apartment building  
using PORTSCO back-up and partition  
units—





Milwaukee, Wisconsin.  
Apartment building in which  
POTTSCO back units was used



Kalamazoo, Mich.  
De Haan apartment buildings  
using POTTSCO back-up units



Milwaukee, Wisconsin  
Showing how POTTSCO walls may  
be cut to place, conduits, electrical  
boxes, pipes, etc-



Milwaukee, Wis.  
A typical residence construction  
using POTTSCO building units--



Milwaukee, Wis.  
A modern service station - POTTSCO back-up  
units with Portland Cement, Stucco



Wauwatosa, Wis.  
Underwood Hotel - POTISCO back-up  
and partition units



Milwaukee, Wis.  
Heiden & Lange Funeral Home  
POTISCO back-up and partition units used



Davenport, Iowa.  
POTISCO back-up and partition units used  
throughout this modern service station—



Milwaukee, Wis.  
Residence construction using  
POTISCO back-up units—



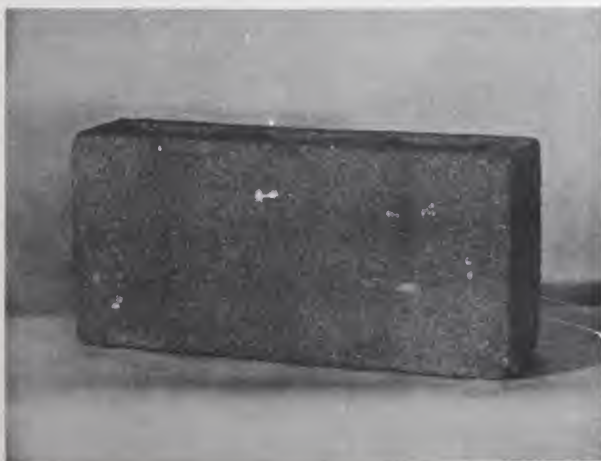
Davenport, Iowa.  
Residence of J. H. Setman  
Interior walls ready for  
direct plaster on POTISCO  
building units—





A magnified granule of  
POTTSO light-weight  
Aggregate

Milwaukee, Wis.  
Asphalt composition siding nailed directly  
to POTTSO back-up blocks--



A typical standard  
4" x 8" x 16" POTTSO building  
unit--



Specimen section showing POTTSO  
light-weight concrete for fire-proofing  
steel columns, saving dead weight  
and increasing fire protection--







